

Chemical Analysis Report

SE-DIST-2021-05-18-01

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

Event Description: **SMP - 3208B Pickup/3208C Deploy**
Request ID: **RQ-2021-04-19-37**
Customer: **SE-DIST**
Project ID: **SMP**

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Date Certified: 10-JUN-2021 10:57



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: South Fork SLR @ Hosford Park

Collection Date/Time: 05/17/2021 14:25

Field ID: G2SE0043

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2247941	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P398380	
	SM 2320 B-2011	Total Alkalinity	198		mg CaCO3/L	P398525	
	SM 2540 D-2011	TSS	8	I	mg/L	P398607	
	SM 4500 F-C-2011	Fluoride	0.34		mg F/L	P398528	
2247942	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P398928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P398616	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398444	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P398580	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P398622	
2247943	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.095		mg P/L	P398369	
2247954	EPA 8321B	Acesulfame K	0.10	U	ug/L	P398389	
		2,4-D	0.021		ug/L	P398328	
		AMPA	1.0	U	ug/L	P398389	
		2,4,5-T	0.0040	U	ug/L	P398328	
		Sucralose	0.12		ug/L	P398389	MS
		Acetaminophen	0.0080	U	ug/L	P398328	
		Endothall	0.25	U	ug/L	P398389	
		Acetamiprid	0.0020	U	ug/L	P398328	
		Glufosinate	1.0	U	ug/L	P398389	
		Glyphosate	1.0	U	ug/L	P398389	
		Afidopyropen	0.0020	U	ug/L	P398328	
		Bentazon	0.018		ug/L	P398328	
		Benzovindiflupyr	0.0020	U	ug/L	P398328	
		Carbamazepine	8.0E-04	U	ug/L	P398328	
		Clothianidin	0.0020	U	ug/L	P398328	
		Dinotefuran	0.0030	I	ug/L	P398328	
		Diuron	0.014		ug/L	P398328	
		Fenuron	0.016	U	ug/L	P398328	
		Fluridone	0.0022	I	ug/L	P398328	
		Imazapyr	0.088		ug/L	P398328	
		Hydrocodone	0.0020	U	ug/L	P398328	
		Ibuprofen	0.020	U	ug/L	P398328	
		Imidacloprid	0.0041	I	ug/L	P398328	MS
		Linuron	0.0040	U	ug/L	P398328	
		Mandestrobin	0.0020	U	ug/L	P398328	
		MCP	0.0020	U	ug/L	P398328	
		Naproxen	0.0080	U	ug/L	P398328	
		Primidone	0.0040	U	ug/L	P398328	
		Pyraclostrobin	0.0020	U	ug/L	P398328	
		Thiamethoxam	0.0020	U	ug/L	P398328	
		Tolfenpyrad	0.0020	U	ug/L	P398328	
		Triclopyr	0.0040	U	ug/L	P398328	
2247956	EPA 200.7 Rev. 4.4	Calcium	142		mg/L	P398521	

Field ID: G2SE0043

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2247956	EPA 200.7 Rev. 4.4	Iron	160		ug/L	P398521	
		Magnesium	174		mg/L	P398521	
		Manganese	40.1		ug/L	P398521	
		Zinc	5.3	I	ug/L	P398521	
	EPA 200.8 Rev. 5.4	Aluminum	89		ug/L	P398521	
		Antimony	0.18	I	ug/L	P398521	
		Arsenic	4.09		ug/L	P398521	
		Beryllium	0.010	U	ug/L	P398521	
		Cadmium	0.020	U	ug/L	P398521	
		Chromium	0.40	U	ug/L	P398521	
		Copper	3.20		ug/L	P398521	
		Lead	0.20	U	ug/L	P398521	
		Nickel	0.50	U	ug/L	P398521	
		Selenium	0.24	I	ug/L	P398521	
		Silver	0.010	U	ug/L	P398521	
		Thallium	0.10	U	ug/L	P398521	

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: MDL for some parameters elevated due to matrix interference.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Willoughby Creek

Collection Date/Time: 05/17/2021 15:00

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2247938	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P398380	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P398525	
	SM 2540 D-2011	TSS	10		mg/L	P398608	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P398530	
2247939	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P398928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P398616	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398444	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P398580	
	SM 5310 B-2011	Organic Carbon	3.0		mg C/L	P398808	
2247940	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P398369	
2247952	EPA 8276	Chlordane	13	IQ	ng/L	P398782	
		Toxaphene	34	UQ	ng/L	P398782	
2247953	EPA 8321B	Acesulfame K	0.10	U	ug/L	P398389	
		2,4-D	0.0025	I	ug/L	P398328	
		AMPA	1.0	U	ug/L	P398389	
		2,4,5-T	0.0040	U	ug/L	P398328	
		Sucralose	0.021	IJ	ug/L	P398389	MS, SUR
		Acetaminophen	0.0080	U	ug/L	P398328	
		Endothall	0.25	U	ug/L	P398389	
		Acetamiprid	0.0020	U	ug/L	P398328	
		Glufosinate	1.0	U	ug/L	P398389	
		Glyphosate	1.0	U	ug/L	P398389	
		Afidopyropen	0.0020	U	ug/L	P398328	
		Bentazon	0.0027	I	ug/L	P398328	
		Benzovindiflupyr	0.0020	U	ug/L	P398328	
		Carbamazepine	8.0E-04	U	ug/L	P398328	
		Clothianidin	0.0020	U	ug/L	P398328	
		Dinotefuran	0.0020	U	ug/L	P398328	
		Diuron	0.010		ug/L	P398328	
		Fenuron	0.016	U	ug/L	P398328	
		Fluridone	8.0E-04	U	ug/L	P398328	
		Imazapyr	0.0045	I	ug/L	P398328	
		Hydrocodone	0.0020	U	ug/L	P398328	
		Ibuprofen	0.020	U	ug/L	P398328	
		Imidacloprid	0.0020	U	ug/L	P398328	MS
		Linuron	0.0040	U	ug/L	P398328	
		Mandestrobin	0.0020	U	ug/L	P398328	
		MCP	0.0020	U	ug/L	P398328	
		Naproxen	0.0080	U	ug/L	P398328	
		Primidone	0.0040	U	ug/L	P398328	
		Pyraclostrobin	0.0020	U	ug/L	P398328	
		Thiamethoxam	0.0020	U	ug/L	P398328	
		Tolfenpyrad	0.0020	U	ug/L	P398328	

Field ID: G2SE0034

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2247953	EPA 8321B	Triclopyr	0.0040	U	ug/L	P398328	
2247955	EPA 200.7 Rev. 4.4	Calcium	449		mg/L	P398452	
		Chromium	4.0	U	ug/L	P398452	
		Iron	240	I	ug/L	P398452	
		Magnesium	1.37E+03		mg/L	P398452	
		Manganese	6.5	I	ug/L	P398452	
		Zinc	20	U	ug/L	P398452	
	EPA 200.8 Rev. 5.4	Aluminum	278		ug/L	P398452	
		Antimony	0.22	I	ug/L	P398452	
		Arsenic	2.58		ug/L	P398452	
		Beryllium	0.040	U	ug/L	P398452	
		Cadmium	0.080	U	ug/L	P398452	
		Copper	3.0	I	ug/L	P398452	
		Lead	0.80	U	ug/L	P398452	
		Nickel	2.0	U	ug/L	P398452	
		Selenium	0.80	U	ug/L	P398452	
		Silver	0.040	U	ug/L	P398452	
		Thallium	0.40	U	ug/L	P398452	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch relative percent difference is unavailable because of analytical difficulties.

EPA 8276: Sample expired due to need for re-extraction. Insufficient sample available to perform duplicate matrix spikes.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Results confirmed in re-extraction. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398380

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398452

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398521

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398452

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
Cadmium	0.020	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 200.8 Rev. 5.4
Batch ID: P398521

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398521

Component	Result	Code	Units
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398928

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398616

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398444

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398580

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398369

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

Reference Method: EPA 8276
Batch ID: P398782

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P398328

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P398328

Component	Result	Code	Units
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: EPA 8321B

Batch ID: P398389

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 2320 B-2011

Batch ID: P398525

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-2011

Batch ID: P398607

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P398608

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P398530

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P398622

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P398808

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: P398452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Chromium	98.7		P	85 - 115
Iron	106		P	85 - 115
Magnesium	103		P	85 - 115
Manganese	102		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	104		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	99.4		P	85 - 115
Zinc	90.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.6		P	85 - 115
Antimony	99.0		P	85 - 115
Arsenic	100		P	85 - 115
Beryllium	88.5		P	85 - 115
Cadmium	102		P	85 - 115
Copper	98.3		P	85 - 115
Lead	92.3		P	85 - 115
Nickel	97.9		P	85 - 115
Selenium	101		P	85 - 115
Silver	102		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	109		P	85 - 115
Arsenic	105		P	85 - 115
Beryllium	102		P	85 - 115
Cadmium	109		P	85 - 115
Chromium	103		P	85 - 115
Copper	102		P	85 - 115
Lead	111		P	85 - 115
Nickel	104		P	85 - 115
Selenium	105		P	85 - 115
Silver	105		P	85 - 115
Thallium	110		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398616

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398580

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Reference Method: EPA 8276
Batch ID: P398782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	99.6	77.5	P/P	56 - 117
Toxaphene	85.9	68.7	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P398328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	40 - 150
2,4,5-T	115		P	40 - 150
Acetaminophen	75.0		P	30 - 150
Acetamiprid	90.6		P	40 - 150
Afidopyropen	76.9		P	40 - 150
Bentazon	86.8		P	30 - 150
Benzovindiflupyr	77.8		P	40 - 150
Carbamazepine	88.3		P	40 - 150
Clothianidin	79.5		P	40 - 150
Dinotefuran	86.7		P	40 - 150
Diuron	76.3		P	40 - 150
Fenuron	95.2		P	40 - 150
Fluridone	84.4		P	40 - 150
Hydrocodone	79.2		P	40 - 150
Ibuprofen	74.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P398328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imazapyr	96.1		P	40 - 150
Imidacloprid	88.6		P	40 - 150
Linuron	73.1		P	40 - 150
Mandestrobin	87.7		P	40 - 150
MCPP	125		P	40 - 150
Naproxen	70.9		P	40 - 150
Primidone	89.4		P	40 - 150
Pyraclostrobin	69.6		P	40 - 150
Thiamethoxam	84.3		P	40 - 150
Tolfenpyrad	44.9		P	40 - 150
Triclopyr	118		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P398389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.6		P	40 - 150
AMPA	92.4		P	40 - 150
Endothall	124		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	103		P	40 - 150
Sucralose	118		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P398525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P398528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P398530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P398622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P398808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248409	Chromium	96.8	97.7	P/P	70 - 130
2248409	Iron	107	107	P/P	70 - 130
2248409	Manganese	101	104	P/P	70 - 130
2248409	Zinc	119	120	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247980	Calcium	101		P	80 - 120
2247980	Iron	102		P	80 - 120
2247980	Magnesium	101		P	80 - 120
2247980	Manganese	98.4		P	80 - 120
2247980	Zinc	91.0		P	80 - 120
2248112	Calcium	112	112	P/P	80 - 120
2248112	Iron	108	108	P/P	80 - 120
2248112	Magnesium	108	108	P/P	80 - 120
2248112	Manganese	104	105	P/P	80 - 120
2248112	Zinc	98.4	99.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248409	Aluminum	99.6	105	P/P	70 - 130
2248409	Antimony	97.3	103	P/P	70 - 130
2248409	Arsenic	102	108	P/P	70 - 130
2248409	Beryllium	94.7	90.6	P/P	80 - 120
2248409	Cadmium	92.6	97.3	P/P	70 - 130
2248409	Copper	104	110	P/P	70 - 130
2248409	Lead	94.3	99.3	P/P	70 - 130
2248409	Nickel	103	111	P/P	70 - 130
2248409	Selenium	93.9	101	P/P	70 - 130
2248409	Silver	90.3	92.7	P/P	70 - 130
2248409	Thallium	108	113	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247980	Antimony	111		P	80 - 120
2247980	Arsenic	107		P	80 - 120
2247980	Beryllium	100		P	80 - 120
2247980	Cadmium	109		P	80 - 120
2247980	Chromium	105		P	80 - 120
2247980	Copper	103		P	80 - 120
2247980	Lead	114		P	80 - 120
2247980	Nickel	104		P	80 - 120
2247980	Selenium	104		P	80 - 120
2247980	Silver	105		P	80 - 120
2247980	Thallium	113		P	80 - 120
2248112	Aluminum	106	105	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248112	Antimony	109	109	P/P	80 - 120
2248112	Arsenic	107	105	P/P	80 - 120
2248112	Beryllium	99.8	98.4	P/P	80 - 120
2248112	Cadmium	111	109	P/P	80 - 120
2248112	Chromium	105	103	P/P	80 - 120
2248112	Copper	107	105	P/P	80 - 120
2248112	Lead	116	116	P/P	80 - 120
2248112	Nickel	105	103	P/P	80 - 120
2248112	Selenium	105	103	P/P	80 - 120
2248112	Silver	106	104	P/P	80 - 120
2248112	Thallium	113	115	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P398928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250204	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P398616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247832	Kjeldahl Nitrogen	99.5	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P398444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247831	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P398580

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247939	Total-P	97.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247940	O-Phosphate-P	95.8	98.0	P/P	90 - 110

Reference Method: EPA 8276

Batch ID: P398782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247723	Chlordane	83.2		P	47 - 128
2247723	Toxaphene	130		P	11 - 163

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P398328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247256	2,4-D	108	104	P/P	40 - 150
2247256	2,4,5-T	97.0	97.8	P/P	40 - 150
2247256	Acetaminophen	92.3	89.3	P/P	30 - 150
2247256	Acetamiprid	85.0	93.1	P/P	40 - 150
2247256	Afidopyropen	73.0	72.8	P/P	40 - 150
2247256	Bentazon	38.4	38.5	P/P	30 - 150
2247256	Benzovindiflupyr	79.6	86.0	P/P	40 - 150
2247256	Carbamazepine	72.1	76.4	P/P	40 - 150
2247256	Clothianidin	81.3	75.1	P/P	40 - 150
2247256	Dinotefuran	124	122	P/P	40 - 150
2247256	Diuron	52.2	57.2	P/P	40 - 150
2247256	Fenuron	92.4	90.9	P/P	40 - 150
2247256	Fluridone	81.3	79.8	P/P	40 - 150
2247256	Hydrocodone	84.7	84.9	P/P	40 - 150
2247256	Ibuprofen	77.5	71.2	P/P	40 - 150
2247256	Imidacloprid	156	150	F/P	40 - 150
2247256	Linuron	65.9	64.9	P/P	40 - 150
2247256	Mandestrobin	87.0	89.1	P/P	40 - 150
2247256	MCPP	105	110	P/P	40 - 150
2247256	Naproxen	64.0	74.9	P/P	40 - 150
2247256	Primidone	109	102	P/P	40 - 150
2247256	Pyraclostrobin	71.0	70.3	P/P	40 - 150
2247256	Thiamethoxam	106	106	P/P	40 - 150
2247256	Tolfenpyrad	49.4	50.0	P/P	40 - 150
2247256	Triclopyr	102	108	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P398389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2248451	Acesulfame K	79.1	72.4	P/P	40 - 150
2248451	AMPA	92.8	92.5	P/P	40 - 150
2248451	Endothall	92.7	88.8	P/P	40 - 150
2248451	Glufosinate	92.2	87.3	P/P	40 - 150
2248451	Glyphosate	90.0	86.1	P/P	40 - 150
2248451	Sucralose	41.0	33.2	P/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246890	Fluoride	99.6	100	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P398530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247702	Fluoride	101		P	92 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P398622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247848	Organic Carbon	100	100	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P398808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247022	Organic Carbon	98.5	98.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247927	Turbidity	2.49	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248409	Calcium	2.66	Spike	P	0 - 20
2248409	Chromium	0.930	Spike	P	0 - 20
2248409	Iron	0.172	Spike	P	0 - 20
2248409	Magnesium	2.70	Spike	P	0 - 20
2248409	Manganese	2.40	Spike	P	0 - 20
2248409	Zinc	1.27	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248112	Calcium	0.404	Spike	P	0 - 20
2248112	Iron	0.145	Spike	P	0 - 20
2248112	Magnesium	0.0653	Spike	P	0 - 20
2248112	Manganese	0.389	Spike	P	0 - 20
2248112	Zinc	0.830	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248409	Aluminum	5.46	Spike	P	0 - 20
2248409	Antimony	6.03	Spike	P	0 - 20
2248409	Arsenic	4.51	Spike	P	0 - 20
2248409	Beryllium	4.50	Spike	P	0 - 20
2248409	Cadmium	5.01	Spike	P	0 - 20
2248409	Copper	5.45	Spike	P	0 - 20
2248409	Lead	5.09	Spike	P	0 - 20
2248409	Nickel	4.55	Spike	P	0 - 20
2248409	Selenium	6.70	Spike	P	0 - 20
2248409	Silver	2.61	Spike	P	0 - 20
2248409	Thallium	5.02	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248112	Aluminum	0.761	Spike	P	0 - 20
2248112	Antimony	0.467	Spike	P	0 - 20
2248112	Arsenic	1.87	Spike	P	0 - 20
2248112	Beryllium	1.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248112	Cadmium	1.60	Spike	P	0 - 20
2248112	Chromium	1.32	Spike	P	0 - 20
2248112	Copper	2.11	Spike	P	0 - 20
2248112	Lead	0.0721	Spike	P	0 - 20
2248112	Nickel	2.59	Spike	P	0 - 20
2248112	Selenium	2.19	Spike	P	0 - 20
2248112	Silver	1.80	Spike	P	0 - 20
2248112	Thallium	1.28	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P398928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250204	Ammonia-N	0.375	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P398616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247832	Kjeldahl Nitrogen	5.84	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P398444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247831	NO2NO3-N	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P398580

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247939	Total-P	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247940	O-Phosphate-P	1.90	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P398782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Chlordane	25.0	LCS	P	0 - 30
LFB	Toxaphene	22.2	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P398328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247256	2,4-D	3.02	Spike	P	0 - 30
2247256	2,4,5-T	0.883	Spike	P	0 - 30
2247256	Acetaminophen	3.35	Spike	P	0 - 30
2247256	Acetamiprid	9.06	Spike	P	0 - 30
2247256	Afidopyropen	0.275	Spike	P	0 - 30
2247256	Bentazon	0.179	Spike	P	0 - 30
2247256	Benzovindiflupyr	7.78	Spike	P	0 - 30
2247256	Carbamazepine	5.71	Spike	P	0 - 30
2247256	Clothianidin	7.89	Spike	P	0 - 30
2247256	Dinotefuran	1.20	Spike	P	0 - 30
2247256	Diuron	9.14	Spike	P	0 - 30
2247256	Fenuron	1.63	Spike	P	0 - 30
2247256	Fluridone	1.74	Spike	P	0 - 30
2247256	Hydrocodone	0.243	Spike	P	0 - 30
2247256	Ibuprofen	8.50	Spike	P	0 - 30
2247256	Imazapyr	3.76	Spike	P	0 - 30
2247256	Imidacloprid	2.77	Spike	P	0 - 30
2247256	Linuron	1.41	Spike	P	0 - 30
2247256	Mandestrobin	2.41	Spike	P	0 - 30
2247256	MCP	5.52	Spike	P	0 - 30
2247256	Naproxen	15.7	Spike	P	0 - 30
2247256	Primidone	6.20	Spike	P	0 - 30
2247256	Pyraclostrobin	0.915	Spike	P	0 - 30
2247256	Thiamethoxam	0.472	Spike	P	0 - 30
2247256	Tolfenpyrad	1.29	Spike	P	0 - 30
2247256	Triclopyr	5.52	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P398389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2248451	Acesulfame K	8.93	Spike	P	0 - 30
2248451	AMPA	0.302	Spike	P	0 - 30
2248451	Endothall	4.28	Spike	P	0 - 30
2248451	Glufosinate	5.44	Spike	P	0 - 30
2248451	Glyphosate	3.63	Spike	P	0 - 30
2248451	Sucralose	21.1	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P398525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Total Alkalinity	2.02	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Fluoride	0.477	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P398622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247848	Organic Carbon	0.164	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P398808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247022	Organic Carbon	0.234	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2247952
Field Sample ID: G2SE0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	64.3	P	29 - 92.0
EPA 8276	PCNB	79.7	P	43 - 134

Lab Sample ID: 2247953
Field Sample ID: G2SE0034

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.3	P	30 - 160
EPA 8321B	Diuron-d6	65.0	P	30 - 160
EPA 8321B	Endothall-d6	76.2	P	30 - 160
EPA 8321B	Endothall-d6	76.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.7	P	30 - 160
EPA 8321B	Primidone-d5	92.9	P	30 - 160
EPA 8321B	Sucralose-d6	15.5	F	30 - 160
EPA 8321B	Sucralose-d6	15.5	F	30 - 160

Lab Sample ID: 2247954
Field Sample ID: G2SE0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.0	P	30 - 160
EPA 8321B	Diuron-d6	55.9	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	62.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	62.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.2	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	74.4	P	30 - 160
EPA 8321B	Sucralose-d6	74.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105506

Included Lab Sample IDs: 2247940, 2247943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105510

Included Lab Sample IDs: 2247938, 2247941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	99.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A105528

Included Lab Sample IDs: 2247953, 2247954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.4	110	P/P	40 - 160
Glufosinate	85.8	95.2	P/P	60 - 200
Glyphosate	89.1	102	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105533

Included Lab Sample IDs: 2247939, 2247942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105543

Included Lab Sample IDs: 2247953, 2247954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.6	87.5	P/P	60 - 160
Endothall	107	116	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A105556

Included Lab Sample IDs: 2247953, 2247954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	92.2	P/P	50 - 150
2,4,5-T	99.7	105	P/P	50 - 150
Acetaminophen	98.9	97.7	P/P	60 - 160
Acetamiprid	102	106	P/P	50 - 150
Afidopyropen	95.8	101	P/P	50 - 150
Bentazon	110	100	P/P	50 - 160
Benzovindiflupyr	106	108	P/P	50 - 150
Carbamazepine	99.6	105	P/P	60 - 150
Clothianidin	100	97.0	P/P	60 - 150
Dinotefuran	94.5	99.6	P/P	50 - 150
Diuron	96.2	99.6	P/P	60 - 160
Fenuron	89.8	89.2	P/P	60 - 150
Fluridone	99.8	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A105556

Included Lab Sample IDs: 2247953, 2247954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	97.2	99.3	P/P	60 - 150
Ibuprofen	95.8	106	P/P	50 - 160
Imazapyr	110	115	P/P	50 - 150
Imidacloprid	96.5	89.5	P/P	60 - 150
Linuron	97.7	97.8	P/P	60 - 150
Mandestrobin	99.3	106	P/P	50 - 150
MCP	97.3	102	P/P	50 - 150
Naproxen	101	99.1	P/P	50 - 160
Primidone	93.9	96.6	P/P	60 - 150
Pyraclostrobin	102	102	P/P	60 - 150
Thiamethoxam	104	101	P/P	50 - 150
Tolfenpyrad	94.0	97.9	P/P	60 - 150
Triclopyr	100	99.4	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A105567

Included Lab Sample IDs: 2247938, 2247941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105567

Included Lab Sample IDs: 2247938, 2247941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	101	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105596

Included Lab Sample IDs: 2247955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	95 - 105
Chromium	98.4	101	P/P	95 - 105
Iron	103	103	P/P	95 - 105
Magnesium	103	104	P/P	95 - 105
Manganese	99.3	100	P/P	95 - 105
Zinc	104	108	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A105604

Included Lab Sample IDs: 2247942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.1	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105606

Included Lab Sample IDs: 2247955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Antimony	99.4	101	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Beryllium	99.4	101	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	95.4	95.0	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Thallium	98.2	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105612

Included Lab Sample IDs: 2247942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105619

Included Lab Sample IDs: 2247939, 2247942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105625

Included Lab Sample IDs: 2247953, 2247954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	115	114	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105637

Included Lab Sample IDs: 2247939

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105650

Included Lab Sample IDs: 2247956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	106	104	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Manganese	105	104	P/P	90 - 110
Zinc	99.8	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A105673

Included Lab Sample IDs: 2247939

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105709

Included Lab Sample IDs: 2247956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	106	107	P/P	90 - 110
Antimony	106	108	P/P	90 - 110
Arsenic	104	104	P/P	90 - 110
Beryllium	102	103	P/P	90 - 110
Cadmium	105	106	P/P	90 - 110
Chromium	102	104	P/P	90 - 110
Copper	101	102	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	105	107	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105732

Included Lab Sample IDs: 2247939, 2247942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105862

Included Lab Sample IDs: 2247956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	104	100	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A105913

Included Lab Sample IDs: 2247952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.7		P	80 - 120
Toxaphene	95.0		P	80 - 120

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							2.49	
EPA 200.7 Rev. 4.4	Calcium	108							2.66
	Calcium	104		101	112	112			0.404
	Chromium	98.7		96.8	97.7				0.930
	Iron	106		107	107				0.172
	Iron	104		102	108	108			0.145
	Magnesium	103							2.70
	Magnesium	102		101	108	108			0.0653
	Manganese	102		101	104				2.40
	Manganese	99.4		98.4	104	105			0.389
	Zinc	106		119	120				1.27
	Zinc	90.7		91.0	98.4	99.2			0.830
EPA 200.8 Rev. 5.4	Aluminum	96.6		99.6	105				5.46
	Aluminum	103		106	105				0.761
	Antimony	99.0		97.3	103				6.03
	Antimony	109		111	109	109			0.467
	Arsenic	100		102	108				4.51
	Arsenic	105		107	107	105			1.87
	Beryllium	88.5		94.7	90.6				4.50
	Beryllium	102		100	99.8	98.4			1.49
	Cadmium	102		92.6	97.3				5.01
	Cadmium	109		109	111	109			1.60
	Chromium	103		105	105	103			1.32
	Copper	98.3		104	110				5.45
	Copper	102		103	107	105			2.11
	Lead	92.3		94.3	99.3				5.09
	Lead	111		114	116	116			0.0721
	Nickel	97.9		103	111				4.55
	Nickel	104		104	105	103			2.59
	Selenium	101		93.9	101				6.70
	Selenium	105		104	105	103			2.19
	Silver	102		90.3	92.7				2.61
	Silver	105		105	106	104			1.80
	Thallium	105		108	113				5.02
	Thallium	110		113	113	115			1.28
EPA 350.1 Rev. 2.0	Ammonia-N	97.4		102	102				0.375
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		99.5	107				5.84
EPA 353.2 Rev. 2.0	NO2NO3-N	103		106	107				0.939
EPA 365.1 Rev. 2.0	Total-P	105		97.2	97.6				0.487
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6		95.8	98.0				1.90
EPA 8276	Chlordane	99.6	77.5	83.2			25.0		
	Toxaphene	85.9	68.7	130			22.2		
EPA 8321B	2,4-D	127		108	104				3.02
	2,4,5-T	115		97.0	97.8				0.883
	Acesulfame K	99.6		79.1	72.4				8.93
	Acetaminophen	75.0		92.3	89.3				3.35
	Acetamiprid	90.6		85.0	93.1				9.06
	Afidopyropen	76.9		73.0	72.8				0.275
	AMPA	92.4		92.8	92.5				0.302
	Bentazon	86.8		38.4	38.5				0.179
	Benzovindiflupyr	77.8		79.6	86.0				7.78
	Carbamazepine	88.3		72.1	76.4				5.71
	Clothianidin	79.5		81.3	75.1				7.89
	Dinotefuran	86.7		124	122				1.20

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Diuron	76.3	52.2	57.2			9.14
	Endothall	124	92.7	88.8			4.28
	Fenuron	95.2	92.4	90.9			1.63
	Fluridone	84.4	81.3	79.8			1.74
	Glufosinate	106	92.2	87.3			5.44
	Glyphosate	103	90.0	86.1			3.63
	Hydrocodone	79.2	84.7	84.9			0.243
	Ibuprofen	74.0	77.5	71.2			8.50
	Imazapyr	96.1					3.76
	Imidacloprid	88.6	156	150			2.77
	Linuron	73.1	65.9	64.9			1.41
	Mandestrobin	87.7	87.0	89.1			2.41
	MCPP	125	105	110			5.52
	Naproxen	70.9	64.0	74.9			15.7
	Primidone	89.4	109	102			6.20
	Pyraclostrobin	69.6	71.0	70.3			0.915
	Sucralose	118	41.0	33.2			21.1
	Thiamethoxam	84.3	106	106			0.472
	Tolfenpyrad	44.9	49.4	50.0			1.29
	Triclopyr	118	102	108			5.52
SM 2320 B-2011	Total Alkalinity	99.3				2.02	
SM 4500 F-C-2011	Fluoride	100	99.6	100			0.477
	Fluoride	99.0	101				
SM 5310 B-2011	Organic Carbon	95.4	100	100			0.164
	Organic Carbon	101	98.5	98.7			0.234

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2247938, 2247941
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2247955, 2247956
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2247955, 2247956
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2247939, 2247942
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2247939, 2247942
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2247939, 2247942
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2247939, 2247942
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2247940, 2247943
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2247952
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2247953, 2247954
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2247953, 2247954
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2247938, 2247941
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2247938, 2247941
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2247938, 2247941
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2247939, 2247942

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	05/18/2021			05/18/2021 15:36	Sarah A Nixon	2247938, 2247941
EPA 200.7 Rev. 4.4	05/18/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 10:44	Betina Topolski	2247955
	05/18/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 11:02	Betina Topolski	2247955
	05/18/2021	05/20/2021 16:00	Elliott D. Healy	05/25/2021 14:34	Betina Topolski	2247956
	05/18/2021	05/20/2021 16:00	Elliott D. Healy	05/25/2021 14:43	Betina Topolski	2247956
EPA 200.8 Rev. 5.4	05/18/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 21:52	Alexander Thompson	2247955
	05/18/2021	05/20/2021 16:00	Elliott D. Healy	05/26/2021 17:10	McKinley C Carter	2247956
	05/18/2021	05/20/2021 16:00	Elliott D. Healy	06/04/2021 01:02	Alexander Thompson	2247956
EPA 350.1 Rev. 2.0	05/18/2021			05/27/2021 13:42	Ping Hua	2247939
	05/18/2021			05/27/2021 13:44	Ping Hua	2247942
EPA 351.2 Rev. 2.0	05/18/2021	05/21/2021 13:15	Benjamin T. Nordmann	05/24/2021 11:50	Virginia P. Brown	2247939
	05/18/2021	05/21/2021 13:15	Benjamin T. Nordmann	05/24/2021 11:52	Virginia P. Brown	2247942
EPA 353.2 Rev. 2.0	05/18/2021			05/19/2021 15:47	Touraj Touran	2247939
	05/18/2021			05/19/2021 15:48	Touraj Touran	2247942
EPA 365.1 Rev. 2.0	05/18/2021	05/21/2021 13:27	Yen Ta	05/24/2021 10:30	Shengyu Ding	2247942
	05/18/2021	05/21/2021 13:27	Yen Ta	05/25/2021 10:36	Shengyu Ding	2247939
EPA 365.1 Rev. 2.0 dissolved	05/18/2021			05/18/2021 15:28	Lipi Saha	2247940
	05/18/2021			05/18/2021 15:32	Lipi Saha	2247943
EPA 8276	05/18/2021	05/27/2021 08:00	Rasheda Ghaffari	06/04/2021 02:55	Chiran X. Ghimire	2247952
EPA 8321B	05/18/2021	05/18/2021 14:00	Hoor Shaik	05/19/2021 22:17	Juyoung Kim	2247953
	05/18/2021	05/18/2021 14:00	Hoor Shaik	05/19/2021 22:52	Juyoung Kim	2247954
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/19/2021 13:11	Juyoung Kim	2247953
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/19/2021 13:22	Juyoung Kim	2247954
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/20/2021 03:00	Juyoung Kim	2247953
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/20/2021 03:13	Juyoung Kim	2247954
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/24/2021 17:08	Pramila Ghimire	2247953
	05/18/2021	05/19/2021 10:15	Juyoung Kim	05/24/2021 17:20	Pramila Ghimire	2247954
SM 2320 B-2011	05/18/2021			05/20/2021 04:01	Dale L. Simmons	2247941
	05/18/2021			05/20/2021 05:14	Dale L. Simmons	2247938
SM 2540 D-2011	05/18/2021			05/20/2021 15:22	Yijie Li	2247938, 2247941
SM 4500 F-C-2011	05/18/2021			05/20/2021 04:01	Dale L. Simmons	2247941
	05/18/2021			05/20/2021 12:38	Dale L. Simmons	2247938
SM 5310 B-2011	05/18/2021			05/21/2021 00:10	Madeline Gruver	2247942
	05/18/2021			05/25/2021 13:45	Madeline Gruver	2247939