

Chemical Analysis Report

SO-DIST-2021-08-19-01

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

Event Description: **2021 SMP: Tri-County Fair**

Request ID: **RQ-2021-08-16-46**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-SEP-2021 18:28



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: Drainage Ditch @ CR 850

Collection Date/Time: 08/18/2021 09:15

Field ID: G1SD0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270495	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P402711	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P403163	
		Sulfate	33		mg SO4/L	P403165	
	SM 2120 B-2011	Color (true)	99	A	PCU	P402712	
	SM 2320 B-2011	Total Alkalinity	203		mg CaCO3/L	P402850	
	SM 2540 C-2011	TDS	312	A	mg/L	P403217	
	SM 2540 D-2011	TSS	3	IA	mg/L	P403196	
2270496	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P402852	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P403077	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P403154	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P402937	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P402820	
2270497	SM 5310 B-2011	Organic Carbon	17		mg C/L	P403239	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P402698	
2270516	EPA 200.7 Rev. 4.4	Barium	23.7		ug/L	P402737	
		Calcium	89.4		mg/L	P402737	
		Iron	1.04E+03		ug/L	P402737	
		Magnesium	6.63		mg/L	P402737	
		Manganese	20.0		ug/L	P402737	
		Potassium	6.4		mg/L	P402737	
		Sodium	11.0		mg/L	P402737	
	EPA 200.8 Rev. 5.4	Zinc	6.0	I	ug/L	P402737	
		Aluminum	45		ug/L	P402737	
		Antimony	0.13	I	ug/L	P402737	
		Arsenic	1.02		ug/L	P402737	
		Boron**	51.7		ug/L	P402737	
		Cadmium	0.020	U	ug/L	P402737	
		Chromium	0.83	I	ug/L	P402737	
		Copper	0.57	I	ug/L	P402737	
		Lead	0.20	U	ug/L	P402737	
		Nickel	1.1	I	ug/L	P402737	
		Selenium	0.24	I	ug/L	P402737	
		Silver	0.010	U	ug/L	P402737	
		Thallium	0.10	U	ug/L	P402737	
		Hardness	251		mg/L	P402737	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Oak Creek @ Oak Creek Preserve

Collection Date/Time: 08/18/2021 10:40

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270492	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P402711	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P403163	
		Sulfate	16		mg SO4/L	P403165	
	SM 2120 B-2011	Color (true)	39		PCU	P402712	
	SM 2320 B-2011	Total Alkalinity	201		mg CaCO3/L	P402850	
	SM 2540 C-2011	TDS	300		mg/L	P403216	
	SM 2540 D-2011	TSS	2	I	mg/L	P403195	
	SM 4500 F-C-2011	Fluoride	0.087	I	mg F/L	P402852	
2270493	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P403077	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P403154	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P402937	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P402820	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P403239	
2270494	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P402698	
2270514	EPA 8321B	2,4-D	0.018		ug/L	P402808	
		Acesulfame K	0.10	U	ug/L	P402720	MS
		2,4,5-T	0.0040	U	ug/L	P402808	
		AMPA	0.22	I	ug/L	P402720	
		Acetaminophen	0.0080	U	ug/L	P402808	
		Acetamiprid	0.0020	U	ug/L	P402808	
		Endothall	0.25	U	ug/L	P402720	MS
		Glufosinate	0.10	U	ug/L	P402720	
		Glyphosate	0.80		ug/L	P402720	
		Afidopyropen	0.0020	U	ug/L	P402808	
		Bentazon	0.044		ug/L	P402808	
		Sucralose	0.033	I	ug/L	P402720	
		Benzovindiflupyr	0.0020	U	ug/L	P402808	
		Carbamazepine	8.0E-04	U	ug/L	P402808	
		Clothianidin	0.0032	I	ug/L	P402808	
		Dinotefuran	0.0020	U	ug/L	P402808	
		Diuron	0.0032	I	ug/L	P402808	
		Fenuron	0.016	U	ug/L	P402808	
		Fluridone	0.027		ug/L	P402808	
		Imazapyr	0.096		ug/L	P402808	MS
		Hydrocodone	0.0020	U	ug/L	P402808	
		Ibuprofen	0.020	U	ug/L	P402808	
		Imidacloprid	0.022		ug/L	P402808	MS
		Linuron	0.0040	U	ug/L	P402808	
		Mandestrobin	0.0020	U	ug/L	P402808	
		MCP	0.0020	U	ug/L	P402808	
		Naproxen	0.0080	U	ug/L	P402808	
		Primidone	0.0040	U	ug/L	P402808	
		Pyraclostrobin	0.0020	U	ug/L	P402808	

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270514	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P402808	
		Tolfenpyrad	0.0020	U	ug/L	P402808	
		Triclopyr	0.0040	U	ug/L	P402808	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: FB

Collection Date/Time: 08/18/2021 10:40

Field ID: FB_08182021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270498	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P402711	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P403163	
		Sulfate	0.20	U	mg SO4/L	P403165	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P402712	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P402850	
	SM 2540 C-2011	TDS	15	U	mg/L	P403215	
	SM 2540 D-2011	TSS	2	U	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P402852	
2270499	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P403077	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P403157	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P402937	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P402820	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P403240	
2270500	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P402698	
2270515	EPA 8321B	2,4-D	0.0020	U	ug/L	P402808	
		Acesulfame K	0.10	U	ug/L	P402720	MS
		2,4,5-T	0.0040	U	ug/L	P402808	
		AMPA	0.10	U	ug/L	P402720	
		Acetaminophen	0.0080	U	ug/L	P402808	
		Acetamiprid	0.0020	U	ug/L	P402808	
		Endothall	0.25	U	ug/L	P402720	MS
		Glufosinate	0.10	U	ug/L	P402720	
		Glyphosate	0.10	U	ug/L	P402720	
		Afidopyrophen	0.0020	U	ug/L	P402808	
		Bentazon	8.0E-04	U	ug/L	P402808	
		Sucralose	0.010	U	ug/L	P402720	
		Benzovindiflupyr	0.0020	U	ug/L	P402808	
		Carbamazepine	8.0E-04	U	ug/L	P402808	
		Clothianidin	0.0020	U	ug/L	P402808	
		Dinotefuran	0.0020	U	ug/L	P402808	
		Diuron	0.0020	U	ug/L	P402808	
		Fenuron	0.016	U	ug/L	P402808	
		Fluridone	8.0E-04	U	ug/L	P402808	
		Imazapyr	0.0040	U	ug/L	P402808	MS
		Hydrocodone	0.0020	U	ug/L	P402808	
		Ibuprofen	0.020	U	ug/L	P402808	
		Imidacloprid	0.0020	U	ug/L	P402808	MS
		Linuron	0.0040	U	ug/L	P402808	
		Mandestrobin	0.0020	U	ug/L	P402808	
		MCP	0.0020	U	ug/L	P402808	
		Naproxen	0.0080	U	ug/L	P402808	
		Primidone	0.0040	U	ug/L	P402808	
		Pyraclostrobin	0.0020	U	ug/L	P402808	

Field ID: FB_08182021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2270515	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P402808	
		Tolfenpyrad	0.0020	U	ug/L	P402808	
		Triclopyr	0.0040	U	ug/L	P402808	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402711

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402737

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
Manganese	1.0	U	ug/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: P402737

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

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: P403154

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403157

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402937

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402698

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

Reference Method: EPA 8321B
Batch ID: P402720

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: P402808

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P402808

Component	Result	Code	Units
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
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011

Batch ID: P402712

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P402850

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

Reference Method: SM 2540 C-2011

Batch ID: P403215

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P403216

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P403217

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P403194

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P403195

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403196

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403239

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

Reference Method: SM 5310 B-2011
Batch ID: P403240

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: P402737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	106		P	85 - 115
Calcium	101		P	85 - 115
Iron	106		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	101		P	85 - 115
Potassium	105		P	85 - 115
Sodium	102		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	103		P	85 - 115
Boron	100		P	85 - 115
Cadmium	99.5		P	85 - 115
Chromium	99.5		P	85 - 115
Copper	102		P	85 - 115
Lead	102		P	85 - 115
Nickel	102		P	85 - 115
Selenium	100		P	85 - 115
Silver	105		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403163

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403165

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403154

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P403157

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402937

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402820

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P402698

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

Reference Method: EPA 8321B

Batch ID: P402720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.4		P	40 - 150
AMPA	97.9		P	40 - 160
Endothall	126		P	40 - 150
Glufosinate	104		P	40 - 160
Glyphosate	91.6		P	40 - 160
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P402808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.9		P	40 - 150
2,4,5-T	87.1		P	40 - 150
Acetaminophen	75.1		P	30 - 150
Acetamiprid	80.5		P	40 - 150
Afidopyropen	65.6		P	40 - 150
Bentazon	92.0		P	30 - 150
Benzovindiflupyr	78.8		P	40 - 150
Carbamazepine	77.0		P	40 - 150
Clothianidin	74.8		P	40 - 150
Dinotefuran	75.8		P	40 - 150
Diuron	96.1		P	40 - 150
Fenuron	85.3		P	40 - 150
Fluridone	81.8		P	40 - 150
Hydrocodone	77.3		P	40 - 150
Ibuprofen	71.7		P	40 - 150
Imazapyr	91.6		P	40 - 150
Imidacloprid	85.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P402808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	79.4		P	40 - 150
Mandestrobin	77.6		P	40 - 150
MCP	87.3		P	40 - 150
Naproxen	58.1		P	40 - 150
Primidone	87.9		P	40 - 150
Pyraclostrobin	66.5		P	40 - 150
Thiamethoxam	78.0		P	40 - 150
Tolfenpyrad	35.0		P	30 - 150
Triclopyr	76.0		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P402712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P402850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P402852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P403239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P403240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270375	Barium	103		P	80 - 120
2270375	Calcium	99.9		P	80 - 120
2270375	Iron	103		P	80 - 120
2270375	Magnesium	101		P	80 - 120
2270375	Manganese	99.4		P	80 - 120
2270375	Potassium	108		P	80 - 120
2270375	Sodium	102		P	80 - 120
2270375	Zinc	100		P	80 - 120
2270488	Barium	102	104	P/P	80 - 120
2270488	Calcium	97.5		P	80 - 120
2270488	Iron	104	106	P/P	80 - 120
2270488	Magnesium	99.6		P	80 - 120
2270488	Manganese	98.8	101	P/P	80 - 120
2270488	Potassium	106	105	P/P	80 - 120
2270488	Sodium	102		P	80 - 120
2270488	Zinc	98.6	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270375	Aluminum	97.2		P	80 - 120
2270375	Antimony	101		P	80 - 120
2270375	Arsenic	101		P	80 - 120
2270375	Boron	99.6		P	80 - 120
2270375	Cadmium	99.2		P	80 - 120
2270375	Chromium	98.4		P	80 - 120
2270375	Copper	97.8		P	80 - 120
2270375	Lead	102		P	80 - 120
2270375	Nickel	98.2		P	80 - 120
2270375	Selenium	97.1		P	80 - 120
2270375	Silver	102		P	80 - 120
2270375	Thallium	107		P	80 - 120
2270488	Aluminum	97.1	97.7	P/P	80 - 120
2270488	Antimony	102	103	P/P	80 - 120
2270488	Arsenic	103	103	P/P	80 - 120
2270488	Boron	100	100	P/P	80 - 120
2270488	Cadmium	101	102	P/P	80 - 120
2270488	Chromium	102	102	P/P	80 - 120
2270488	Copper	96.5	96.7	P/P	80 - 120
2270488	Lead	102	102	P/P	80 - 120
2270488	Nickel	97.5	98.0	P/P	80 - 120
2270488	Selenium	98.0	98.3	P/P	80 - 120
2270488	Silver	103	103	P/P	80 - 120
2270488	Thallium	107	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270411	Chloride	99.5		P	90 - 110
2270555	Chloride	99.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270411	Sulfate	99.6		P	90 - 110
2270555	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P403077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270542	Ammonia-N	96.2	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270418	NO2NO3-N	94.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270695	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P402698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270543	O-Phosphate-P	98.9	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P402720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	Acesulfame K	154	134	F/P	40 - 150
2270486	AMPA	83.5	84.6	P/P	40 - 160
2270486	Endothall	155	154	F/F	40 - 150
2270486	Glufosinate	84.2	82.7	P/P	40 - 160
2270486	Glyphosate	81.2	82.2	P/P	40 - 160
2270486	Sucralose	112	110	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P402808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	2,4-D	107	104	P/P	40 - 150
2270486	2,4,5-T	100	99.1	P/P	40 - 150
2270486	Acetaminophen	85.7	86.3	P/P	30 - 150
2270486	Acetamiprid	94.1	94.9	P/P	40 - 150
2270486	Afidopyropen	80.2	67.1	P/P	40 - 150
2270486	Benzovindiflupyr	80.8	89.7	P/P	40 - 150
2270486	Carbamazepine	89.4	96.8	P/P	40 - 150
2270486	Clothianidin	114	102	P/P	40 - 150
2270486	Dinotefuran	101	108	P/P	40 - 150
2270486	Diuron	78.5	74.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P402808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270486	Fenuron	88.6	88.4	P/P	40 - 150
2270486	Fluridone	84.1	85.0	P/P	40 - 150
2270486	Hydrocodone	89.9	88.8	P/P	40 - 150
2270486	Ibuprofen	84.5	70.1	P/P	40 - 150
2270486	Imazapyr	157	133	F/P	40 - 150
2270486	Imidacloprid	142	151	P/F	40 - 150
2270486	Linuron	76.2	85.8	P/P	40 - 150
2270486	Mandestrobin	83.6	84.6	P/P	40 - 150
2270486	MCCP	101	104	P/P	40 - 150
2270486	Naproxen	76.5	80.5	P/P	40 - 150
2270486	Primidone	92.5	91.2	P/P	40 - 150
2270486	Pyraclostrobin	77.8	81.9	P/P	40 - 150
2270486	Thiamethoxam	127	127	P/P	40 - 150
2270486	Tolfenpyrad	50.0	55.1	P/P	30 - 150
2270486	Triclopyr	86.8	92.8	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270807	Fluoride	100	99.0	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270415	Organic Carbon	95.5	96.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270722	Organic Carbon	94.0	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P402711

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270492	Turbidity	4.80	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402737

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270488	Barium	1.97	Spike	P	0 - 20
2270488	Calcium	0.268	Spike	P	0 - 20
2270488	Iron	1.21	Spike	P	0 - 20
2270488	Magnesium	1.05	Spike	P	0 - 20
2270488	Manganese	1.80	Spike	P	0 - 20
2270488	Potassium	1.07	Spike	P	0 - 20
2270488	Sodium	0.0696	Spike	P	0 - 20
2270488	Zinc	0.224	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402737

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270488	Aluminum	0.626	Spike	P	0 - 20
2270488	Antimony	0.876	Spike	P	0 - 20
2270488	Arsenic	0.0239	Spike	P	0 - 20
2270488	Boron	0.261	Spike	P	0 - 20
2270488	Cadmium	0.818	Spike	P	0 - 20
2270488	Chromium	0.478	Spike	P	0 - 20
2270488	Copper	0.267	Spike	P	0 - 20
2270488	Lead	0.744	Spike	P	0 - 20
2270488	Nickel	0.541	Spike	P	0 - 20
2270488	Selenium	0.279	Spike	P	0 - 20
2270488	Silver	0.638	Spike	P	0 - 20
2270488	Thallium	0.701	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403163

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270411	Chloride	0.0268	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403165

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270411	Sulfate	0.650	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270542	Ammonia-N	0.180	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270409	Kjeldahl Nitrogen	11.6	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270523	Kjeldahl Nitrogen	2.74	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270418	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270695	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270543	O-Phosphate-P	0.101	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P402720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	Acesulfame K	13.1	Spike	P	0 - 30
2270486	AMPA	1.20	Spike	P	0 - 30
2270486	Endothall	0.531	Spike	P	0 - 30
2270486	Glufosinate	1.84	Spike	P	0 - 30
2270486	Glyphosate	1.21	Spike	P	0 - 30
2270486	Sucralose	1.31	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P402808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270486	2,4-D	2.53	Spike	P	0 - 30
2270486	2,4,5-T	1.19	Spike	P	0 - 30
2270486	Acetaminophen	0.572	Spike	P	0 - 30
2270486	Acetamiprid	0.839	Spike	P	0 - 30
2270486	Afidopyropen	17.7	Spike	P	0 - 30
2270486	Bentazon	4.63	Spike	P	0 - 30
2270486	Benzovindiflupyr	10.4	Spike	P	0 - 30
2270486	Carbamazepine	7.90	Spike	P	0 - 30
2270486	Clothianidin	10.7	Spike	P	0 - 30
2270486	Dinotefuran	5.97	Spike	P	0 - 30
2270486	Diuron	4.62	Spike	P	0 - 30
2270486	Fenuron	0.216	Spike	P	0 - 30
2270486	Fluridone	1.02	Spike	P	0 - 30
2270486	Hydrocodone	1.23	Spike	P	0 - 30
2270486	Ibuprofen	18.7	Spike	P	0 - 30
2270486	Imazapyr	11.1	Spike	P	0 - 30
2270486	Imidacloprid	4.03	Spike	P	0 - 30
2270486	Linuron	11.8	Spike	P	0 - 30
2270486	Mandestrobin	1.20	Spike	P	0 - 30
2270486	MCP	2.30	Spike	P	0 - 30
2270486	Naproxen	5.06	Spike	P	0 - 30
2270486	Primidone	1.46	Spike	P	0 - 30
2270486	Pyraclostrobin	5.05	Spike	P	0 - 30
2270486	Thiamethoxam	0.0550	Spike	P	0 - 30
2270486	Tolfenpyrad	9.75	Spike	P	0 - 30
2270486	Triclopyr	6.74	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P402712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270495	Color (true)	1.65	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P402850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270807	Total Alkalinity	1.71	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P403215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269945	TDS	9.56	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P403216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P403217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270495	TDS	2.88	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P402852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270807	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270415	Organic Carbon	0.646	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P403240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270722	Organic Carbon	1.99	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2270514

Field Sample ID: G1SD0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	79.8	P	30 - 160
EPA 8321B	Endothall-d6	125	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.6	P	30 - 160
EPA 8321B	Primidone-d5	127	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Lab Sample ID: 2270515

Field Sample ID: FB_08182021

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	93.7	P	30 - 160
EPA 8321B	Diuron-d6	81.1	P	30 - 160
EPA 8321B	Endothall-d6	124	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.3	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	96.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107343

Included Lab Sample IDs: 2270494, 2270497, 2270500

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107344

Included Lab Sample IDs: 2270492, 2270495, 2270498

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

Reference Method: SM 2120 B-2011

Run ID: A107345

Included Lab Sample IDs: 2270492, 2270495, 2270498

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

Reference Method: EPA 8321B

Run ID: A107353

Included Lab Sample IDs: 2270514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	109	P/P	60 - 160
Glufosinate	105	108	P/P	60 - 160
Glyphosate	96.2	105	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107376

Included Lab Sample IDs: 2270515

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	109	P/P	60 - 160
Glufosinate	99.4	99.9	P/P	60 - 160
Glyphosate	101	106	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107377

Included Lab Sample IDs: 2270514, 2270515

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.2	83.4	P/P	60 - 160
Endothall	131	140	P/P	60 - 160
Sucralose	103	109	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107401

Included Lab Sample IDs: 2270516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.7	101	P/P	90 - 110
Antimony	97.9	98.8	P/P	90 - 110
Arsenic	98.9	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107401

Included Lab Sample IDs: 2270516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	102	P/P	90 - 110
Cadmium	98.8	99.1	P/P	90 - 110
Chromium	95.8	97.7	P/P	90 - 110
Copper	95.6	96.9	P/P	90 - 110
Lead	98.7	98.1	P/P	90 - 110
Nickel	95.3	97.1	P/P	90 - 110
Selenium	97.0	98.3	P/P	90 - 110
Silver	97.3	97.3	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107408

Included Lab Sample IDs: 2270492, 2270495, 2270498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107408

Included Lab Sample IDs: 2270492, 2270495, 2270498

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107416

Included Lab Sample IDs: 2270516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	97.6	P/P	90 - 110
Calcium	98.7	97.0	P/P	90 - 110
Iron	99.9	97.7	P/P	90 - 110
Magnesium	98.6	97.1	P/P	90 - 110
Manganese	100	98.5	P/P	90 - 110
Potassium	101	99.8	P/P	90 - 110
Sodium	100	98.4	P/P	90 - 110
Zinc	97.8	96.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107449

Included Lab Sample IDs: 2270492, 2270495, 2270498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.1	P/P	90 - 110
Sulfate	99.6	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107455

Included Lab Sample IDs: 2270493, 2270496, 2270499

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107455

Included Lab Sample IDs: 2270493, 2270496, 2270499

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

Reference Method: EPA 8321B

Run ID: A107460

Included Lab Sample IDs: 2270514, 2270515

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	90.6	P/P	50 - 150
2,4,5-T	99.0	98.2	P/P	50 - 150
Acetaminophen	97.3	95.0	P/P	60 - 160
Acetamiprid	108	96.5	P/P	50 - 150
Afidopyropen	97.6	95.4	P/P	50 - 150
Bentazon	116	112	P/P	50 - 160
Benzovindiflupyr	114	104	P/P	50 - 150
Carbamazepine	107	109	P/P	60 - 150
Clothianidin	84.9	99.2	P/P	60 - 150
Dinotefuran	103	94.8	P/P	50 - 150
Diuron	125	126	P/P	60 - 160
Fenuron	100	100	P/P	60 - 150
Fluridone	107	106	P/P	60 - 160
Hydrocodone	97.0	103	P/P	60 - 150
Ibuprofen	84.7	75.6	P/P	50 - 160
Imazapyr	117	122	P/P	50 - 150
Imidacloprid	99.2	98.7	P/P	60 - 150
Linuron	101	108	P/P	60 - 150
Mandestrobin	108	106	P/P	50 - 150
MCPP	96.4	96.2	P/P	50 - 150
Naproxen	73.5	128	P/P	50 - 160
Primidone	107	119	P/P	60 - 150
Pyraclostrobin	109	103	P/P	60 - 150
Thiamethoxam	97.8	104	P/P	50 - 150
Tolfenpyrad	101	99.0	P/P	60 - 150
Triclopyr	102	104	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107480

Included Lab Sample IDs: 2270496

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107511

Included Lab Sample IDs: 2270493, 2270496, 2270499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107534

Included Lab Sample IDs: 2270493, 2270499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107566

Included Lab Sample IDs: 2270499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107593

Included Lab Sample IDs: 2270493, 2270496, 2270499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.5	P/P	90 - 110
Organic Carbon	97.8	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107598

Included Lab Sample IDs: 2270493, 2270496

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	104	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								4.80	
EPA 200.7 Rev. 4.4	Barium	106			103	102	104			1.97
	Calcium	101			99.9	97.5				0.268
	Iron	106			103	104	106			1.21
	Magnesium	101			101	99.6				1.05
	Manganese	101			99.4	98.8	101			1.80
	Potassium	105			108	106	105			1.07
	Sodium	102			102	102				0.0696
	Zinc	104			100	98.6	98.8			0.224
EPA 200.8 Rev. 5.4	Aluminum	100			97.1	97.7	97.2			0.626
	Antimony	101			102	103	101			0.876
	Arsenic	103			103	103	101			0.0239
	Boron	100			100	100	99.6			0.261
	Cadmium	99.5			101	102	99.2			0.818
	Chromium	99.5			102	102	98.4			0.478
	Copper	102			96.5	96.7	97.8			0.267
	Lead	102			102	102	102			0.744
	Nickel	102			97.5	98.0	98.2			0.541
	Selenium	100			98.0	98.3	97.1			0.279
	Silver	105			103	103	102			0.638
	Thallium	103			107	107	107			0.701
EPA 300.0 Rev. 2.1	Chloride	100			99.5	99.9			0.0268	
	Sulfate	99.9			99.6	101			0.650	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2			96.2	96.4				0.180
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104								11.6
	Kjeldahl Nitrogen	104								2.74
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5			94.8					0.0
EPA 365.1 Rev. 2.0	Total-P	102			104	106				1.15
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5			98.9	99.0				0.101
EPA 8321B	2,4-D	82.9			107	104				2.53
	2,4,5-T	87.1			100	99.1				1.19
	Acesulfame K	87.4			154	134				13.1
	Acetaminophen	75.1			85.7	86.3				0.572
	Acetamiprid	80.5			94.1	94.9				0.839
	Afidopyropen	65.6			80.2	67.1				17.7
	AMPA	97.9			83.5	84.6				1.20
	Bentazon	92.0								4.63
	Benzovindiflupyr	78.8			80.8	89.7				10.4
	Carbamazepine	77.0			89.4	96.8				7.90
	Clothianidin	74.8			114	102				10.7
	Dinotefuran	75.8			101	108				5.97
	Diuron	96.1			78.5	74.7				4.62
	Endothall	126			155	154				0.531
	Fenuron	85.3			88.6	88.4				0.216
	Fluridone	81.8			84.1	85.0				1.02
	Glufosinate	104			84.2	82.7				1.84
	Glyphosate	91.6			81.2	82.2				1.21
	Hydrocodone	77.3			89.9	88.8				1.23
	Ibuprofen	71.7			84.5	70.1				18.7
	Imazapyr	91.6			157	133				11.1
	Imidacloprid	85.0			142	151				4.03
	Linuron	79.4			76.2	85.8				11.8
	Mandestrobin	77.6			83.6	84.6				1.20
	MCPP	87.3			101	104				2.30

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	58.1	76.5	80.5		5.06
	Primidone	87.9	92.5	91.2		1.46
	Pyraclostrobin	66.5	77.8	81.9		5.05
	Sucralose	106	112	110		1.31
	Thiamethoxam	78.0	127	127		0.0550
	Tolfenpyrad	35.0	50.0	55.1		9.75
	Triclopyr	76.0	86.8	92.8		6.74
SM 2120 B-2011	Color (true)	102			1.65	
SM 2320 B-2011	Total Alkalinity	101			1.71	
SM 2540 C-2011	TDS				9.56	
	TDS				0.0	
	TDS				2.88	
SM 4500 F-C-2011	Fluoride	102	100	99.0		0.953
SM 5310 B-2011	Organic Carbon	97.1	95.5	96.6		0.646
	Organic Carbon	96.7	94.0	97.5		1.99

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2270492, 2270495, 2270498
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2270516
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2270516
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2270492, 2270495, 2270498
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2270492, 2270495, 2270498
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2270493, 2270496, 2270499
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2270493, 2270496, 2270499
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2270493, 2270496, 2270499
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2270493, 2270496, 2270499
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2270494, 2270497, 2270500
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2270514, 2270515
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2270492, 2270495, 2270498
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2270492, 2270495, 2270498
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2270516
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2270492, 2270495, 2270498
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2270492, 2270495, 2270498
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2270492, 2270495, 2270498
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2270493, 2270496, 2270499

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	08/19/2021			08/19/2021 13:01	Sarah A Nixon	2270492, 2270495, 2270498
EPA 200.7 Rev. 4.4	08/19/2021	08/20/2021 12:50	Elliott D. Healy	08/24/2021 09:06	Josef B Mick	2270516
EPA 200.8 Rev. 5.4	08/19/2021	08/20/2021 12:50	Elliott D. Healy	08/24/2021 00:52	Alexander Thompson	2270516
EPA 300.0 Rev. 2.1	08/19/2021			08/27/2021 15:36	Lipi Saha	2270492
	08/19/2021			08/27/2021 15:48	Lipi Saha	2270495
	08/19/2021			08/27/2021 16:00	Lipi Saha	2270498
EPA 350.1 Rev. 2.0	08/19/2021			08/27/2021 12:16	Ping Hua	2270493
	08/19/2021			08/27/2021 12:17	Ping Hua	2270496
	08/19/2021			08/27/2021 12:20	Ping Hua	2270499
EPA 351.2 Rev. 2.0	08/19/2021	08/30/2021 13:42	Benjamin T. Nordmann	09/01/2021 12:43	Alexandra J Mattheus	2270493
	08/19/2021	08/30/2021 13:42	Benjamin T. Nordmann	09/01/2021 12:45	Alexandra J Mattheus	2270496
	08/19/2021	08/30/2021 13:46	Benjamin T. Nordmann	08/31/2021 11:23	Alexandra J Mattheus	2270499
EPA 353.2 Rev. 2.0	08/19/2021			08/25/2021 08:57	Beverly Y. Sanders	2270493
	08/19/2021			08/25/2021 08:58	Beverly Y. Sanders	2270496
	08/19/2021			08/25/2021 08:59	Beverly Y. Sanders	2270499
EPA 365.1 Rev. 2.0	08/19/2021	08/23/2021 13:48	Simonne.V. Calhoun	08/25/2021 16:56	Shengyu Ding	2270496
	08/19/2021	08/23/2021 13:48	Simonne.V. Calhoun	08/26/2021 16:10	Shengyu Ding	2270499
	08/19/2021	08/23/2021 13:48	Simonne.V. Calhoun	08/26/2021 16:12	Shengyu Ding	2270493
EPA 365.1 Rev. 2.0 dissolved	08/19/2021			08/19/2021 13:27	James L Waggeberby	2270494, 2270497
	08/19/2021			08/19/2021 13:28	James L Waggeberby	2270500
EPA 8321B	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/20/2021 11:01	Juyoung Kim	2270514
	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/20/2021 20:21	Pramila Ghimire	2270514
	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/20/2021 20:35	Pramila Ghimire	2270515
	08/19/2021	08/20/2021 10:00	Juyoung Kim	08/23/2021 12:11	Juyoung Kim	2270515
	08/19/2021	08/24/2021 09:00	Hoor Shaik	08/25/2021 09:12	Juyoung Kim	2270514
	08/19/2021	08/24/2021 09:00	Hoor Shaik	08/25/2021 09:47	Juyoung Kim	2270515
SM 2120 B-2011	08/19/2021			08/19/2021 16:31	Sarah A Nixon	2270495
	08/19/2021			08/19/2021 16:36	Sarah A Nixon	2270492
	08/19/2021			08/19/2021 16:37	Sarah A Nixon	2270498
SM 2320 B-2011	08/19/2021			08/23/2021 19:55	Sarah A Nixon	2270492
	08/19/2021			08/23/2021 20:11	Sarah A Nixon	2270495
	08/19/2021			08/23/2021 20:20	Sarah A Nixon	2270498
SM 2340B	08/19/2021			08/24/2021 09:06	Josef B Mick	2270516
SM 2540 C-2011	08/19/2021			08/23/2021 09:44	Yijie Li	2270498
	08/19/2021			08/23/2021 15:36	Yijie Li	2270492, 2270495
SM 2540 D-2011	08/19/2021			08/23/2021 09:44	Yijie Li	2270498
	08/19/2021			08/23/2021 15:36	Yijie Li	2270492, 2270495
SM 4500 F-C-2011	08/19/2021			08/23/2021 19:55	Sarah A Nixon	2270492
	08/19/2021			08/23/2021 20:11	Sarah A Nixon	2270495
	08/19/2021			08/23/2021 20:20	Sarah A Nixon	2270498

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	08/19/2021			08/30/2021 23:46	Touraj Touran	2270493
	08/19/2021			08/31/2021 00:00	Touraj Touran	2270496
	08/19/2021			08/31/2021 05:11	Touraj Touran	2270499