

Chemical Analysis Report

SO-DIST-2021-01-12-01

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-2021-01-11-33**

Customer: **SO-DIST**

Project ID: **SMP**

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

Date Certified: 03-FEB-2021 17:29



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: 01/11/2021 12:10

Field ID: G1SD0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2218331	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P392278	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P392554	
		Sulfate	24		mg SO4/L	P392559	
		Color (true)	85		PCU	P392309	
	SM 2320 B-2011	Total Alkalinity	197		mg CaCO3/L	P392572	
	SM 2540 C-2011	TDS	317		mg/L	P392807	
	SM 2540 D-2011	TSS	12		mg/L	P392890	
	SM 4500 F-C-2011	Fluoride	0.075	I	mg F/L	P392578	
2218332	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P392776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P392766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P392606	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P392563	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P392392	
2218333	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P392286	
2218380	EPA 200.7 Rev. 4.4	Barium	20.9		ug/L	P392428	
		Calcium	92.3		mg/L	P392428	
		Iron	1.70E+03		ug/L	P392428	
		Magnesium	4.42		mg/L	P392428	
		Manganese	13.4		ug/L	P392428	
		Potassium	3.5		mg/L	P392428	
		Sodium	11.5		mg/L	P392428	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P392428	
		Aluminum	216		ug/L	P392428	
		Antimony	0.075	I	ug/L	P392428	
		Arsenic	0.85		ug/L	P392428	
		Boron**	37.1		ug/L	P392428	
		Cadmium	0.085		ug/L	P392428	
		Chromium	1.5	I	ug/L	P392428	
		Copper	0.58	I	ug/L	P392428	
		Lead	0.89		ug/L	P392428	
		Nickel	1.2	I	ug/L	P392428	
		Selenium	0.20	U	ug/L	P392428	
		Silver	0.010	U	ug/L	P392428	
		Thallium	0.10	U	ug/L	P392428	
		Hardness	249		mg/L	P392428	

Ref. Method and Comment:

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

Sample Location: C-139 Annex @ Deer Fence Canal Rd

Collection Date/Time: 01/11/2021 11:00

Field ID: G1SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2218334	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P392278	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P392554	
		Sulfate	16		mg SO4/L	P392559	
		Color (true)	110		PCU	P392309	
	SM 2320 B-2011	Total Alkalinity	199		mg CaCO3/L	P392572	
	SM 2540 C-2011	TDS	316		mg/L	P392807	
	SM 2540 D-2011	TSS	3	I	mg/L	P392890	
	SM 4500 F-C-2011	Fluoride	0.26		mg F/L	P392578	
2218335	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P393173	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P392766	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P392606	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P392563	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P392392	
2218336	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P392286	
2218379	EPA 8276	Chlordane	5.4	U	ng/L	P392264	
		Toxaphene	32	U	ng/L	P392264	

Ref. Method and Comment:

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

Sample Location: Oak Creek @ Oak Creek Preserve

Collection Date/Time: 01/11/2021 13:15

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2218328	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P392278	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P392554	
		Sulfate	16		mg SO4/L	P392559	
	SM 2120 B-2011	Color (true)	84		PCU	P392309	
	SM 2320 B-2011	Total Alkalinity	294		mg CaCO3/L	P392572	
	SM 2540 C-2011	TDS	402	A	mg/L	P392807	
	SM 2540 D-2011	TSS	2	UA	mg/L	P392890	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P392578	
2218329	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P392776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P392765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P392606	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P392493	
	SM 5310 B-2011	Organic Carbon	7.8		mg C/L	P392392	
2218330	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P392286	
2218366	EPA 8321B	2,4-D	0.0020	U	ug/L	P392244	
		Acesulfame K**	0.10	U	ug/L	P392366	
		AMPA**	0.20	I	ug/L	P392366	
		Sucralose**	0.039	I	ug/L	P392366	
		Acetaminophen**	0.0080	U	ug/L	P392244	
		Acetamiprid**	0.0020	U	ug/L	P392244	
		Endothall**	0.25	U	ug/L	P392366	
		Glufosinate**	0.10	U	ug/L	P392366	
		Glyphosate**	0.10	U	ug/L	P392366	
		Afidopyropen**	0.0020	U	ug/L	P392244	
		Bentazon	0.15		ug/L	P392244	
		Benzovindiflupyr**	0.0020	U	ug/L	P392244	
		Carbamazepine**	8.0E-04	U	ug/L	P392244	
		Clothianidin**	0.0020	U	ug/L	P392244	
		Dinotefuran**	0.0020	U	ug/L	P392244	
		Diuron	0.0020	U	ug/L	P392244	
		Fenuron	0.016	U	ug/L	P392244	
		Fluridone**	0.046		ug/L	P392244	
		Imazapyr**	0.14		ug/L	P392244	
		Hydrocodone**	0.0020	U	ug/L	P392244	
		Ibuprofen**	0.020	U	ug/L	P392244	
		Imidacloprid	0.016		ug/L	P392244	
		Linuron	0.0040	U	ug/L	P392244	
		Mandestrobin**	0.0020	U	ug/L	P392244	
		MCP	0.0020	U	ug/L	P392244	
		Naproxen**	0.0080	U	ug/L	P392244	
		Primidone**	0.0040	U	ug/L	P392244	
		Pyraclostrobin**	0.0020	U	ug/L	P392244	
		Thiamethoxam**	0.0020	U	ug/L	P392244	

Field ID: G1SD0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2218366	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392244	
		Triclopyr**	0.0040	U	ug/L	P392244	

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392278

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392428

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: P392428

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: P392554

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392559

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393173

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392766

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392606

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392493

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392563

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392286

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

Reference Method: EPA 8276
Batch ID: P392264

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

Reference Method: EPA 8321B
Batch ID: P392244

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P392244

Component	Result	Code	Units
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
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: P392366

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B-2011

Batch ID: P392309

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P392572

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

Reference Method: SM 2540 C-2011

Batch ID: P392807

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P392890

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P392392

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: P392428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.0		P	85 - 115
Calcium	104		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Manganese	100		P	85 - 115
Potassium	100		P	85 - 115
Sodium	105		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.7		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	101		P	85 - 115
Boron	98.7		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	107		P	85 - 115
Copper	96.6		P	85 - 115
Lead	103		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	100		P	85 - 115
Silver	109		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392554

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392559

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393173

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392766

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: P392606

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392493

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392563

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392286

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

Reference Method: EPA 8276
Batch ID: P392264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	96.4	97.9	P/P	56 - 117
Toxaphene	101	103	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P392244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	30 - 160
Acetaminophen	77.5		P	30 - 160
Acetamiprid	79.6		P	30 - 160
Afidopyropen	64.8		P	30 - 160
Bentazon	83.9		P	30 - 160
Benzovindiflupyr	71.4		P	30 - 160
Carbamazepine	77.8		P	30 - 160
Clothianidin	74.4		P	30 - 160
Dinotefuran	78.5		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P392244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	54.2		P	30 - 160
Fenuron	81.4		P	30 - 160
Fluridone	76.3		P	30 - 160
Hydrocodone	88.1		P	30 - 160
Ibuprofen	71.3		P	30 - 160
Imazapyr	77.1		P	30 - 160
Imidacloprid	90.7		P	30 - 160
Linuron	72.8		P	30 - 160
Mandestrobin	76.7		P	30 - 160
MCPP	82.8		P	30 - 160
Naproxen	59.5		P	30 - 160
Primidone	77.3		P	30 - 160
Pyraclostrobin	70.4		P	30 - 160
Thiamethoxam	90.4		P	30 - 160
Tolfenpyrad	39.7		P	30 - 160
Triclopyr	77.6		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P392366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	65.7		P	40 - 150
AMPA	89.7		P	40 - 150
Endothall	95.7		P	40 - 150
Glufosinate	98.6		P	40 - 150
Glyphosate	138		P	40 - 140
Sucralose	97.4		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P392309

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

Reference Method: SM 2320 B-2011

Batch ID: P392572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.9		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P392578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P392392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218962	Barium	101		P	80 - 120
2218962	Calcium	102		P	80 - 120
2218962	Iron	108		P	80 - 120
2218962	Magnesium	108		P	80 - 120
2218962	Manganese	102		P	80 - 120
2218962	Potassium	103		P	80 - 120
2218962	Sodium	104		P	80 - 120
2218962	Zinc	102		P	80 - 120
2219222	Barium	101	103	P/P	80 - 120
2219222	Calcium	107	108	P/P	80 - 120
2219222	Iron	106	106	P/P	80 - 120
2219222	Magnesium	105	106	P/P	80 - 120
2219222	Manganese	101	103	P/P	80 - 120
2219222	Potassium	102	106	P/P	80 - 120
2219222	Sodium	103		P	80 - 120
2219222	Zinc	99.5	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218962	Aluminum	96.0		P	80 - 120
2218962	Antimony	100		P	80 - 120
2218962	Arsenic	97.0		P	80 - 120
2218962	Boron	89.8		P	80 - 120
2218962	Cadmium	93.4		P	80 - 120
2218962	Chromium	103		P	80 - 120
2218962	Copper	93.9		P	80 - 120
2218962	Lead	102		P	80 - 120
2218962	Nickel	95.4		P	80 - 120
2218962	Selenium	96.0		P	80 - 120
2218962	Silver	106		P	80 - 120
2218962	Thallium	103		P	80 - 120
2219222	Aluminum	96.4	96.9	P/P	80 - 120
2219222	Antimony	104	103	P/P	80 - 120
2219222	Arsenic	99.6	98.7	P/P	80 - 120
2219222	Boron	96.1	99.9	P/P	80 - 120
2219222	Cadmium	96.2	92.1	P/P	80 - 120
2219222	Chromium	103	103	P/P	80 - 120
2219222	Copper	96.5	96.1	P/P	80 - 120
2219222	Lead	103	103	P/P	80 - 120
2219222	Nickel	97.9	96.9	P/P	80 - 120
2219222	Selenium	96.6	96.8	P/P	80 - 120
2219222	Silver	110	109	P/P	80 - 120
2219222	Thallium	102	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218293	Chloride	98.7		P	90 - 110
2218508	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218293	Sulfate	101		P	90 - 110
2218508	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218298	Ammonia-N	96.0	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218602	Ammonia-N	96.6	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218300	Kjeldahl Nitrogen	109	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218369	Kjeldahl Nitrogen	105	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218300	NO2NO3-N	97.1	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218277	Total-P	108	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218332	Total-P	102	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218284	O-Phosphate-P	102	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P392264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218379	Chlordane	96.1	99.3	P/P	47 - 128
2218379	Toxaphene	132	140	P/P	11 - 163

Reference Method: EPA 8321B
Batch ID: P392244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218029	2,4-D	118	109	P/P	30 - 160
2218029	Acetaminophen	91.3	83.0	P/P	30 - 160
2218029	Acetamiprid	97.5	90.4	P/P	30 - 160
2218029	Afidopyropen	71.1	66.8	P/P	30 - 160
2218029	Bentazon	66.0	66.7	P/P	30 - 160
2218029	Benzovindiflupyr	78.2	75.6	P/P	30 - 160
2218029	Carbamazepine	78.1	76.6	P/P	30 - 160
2218029	Clothianidin	101	93.0	P/P	30 - 160
2218029	Dinotefuran	103	103	P/P	30 - 160
2218029	Diuron	51.8	53.0	P/P	30 - 160
2218029	Fenuron	89.1	90.8	P/P	30 - 160
2218029	Fluridone	80.9	72.6	P/P	30 - 160
2218029	Hydrocodone	103	107	P/P	30 - 160
2218029	Ibuprofen	83.8	88.6	P/P	30 - 160
2218029	Imazapyr	123	113	P/P	30 - 160
2218029	Imidacloprid	131	144	P/P	30 - 160
2218029	Linuron	65.3	66.6	P/P	30 - 160
2218029	Mandestrobin	86.8	83.0	P/P	30 - 160
2218029	MCPP	102	95.9	P/P	30 - 160
2218029	Naproxen	66.3	82.2	P/P	30 - 160
2218029	Primidone	95.1	89.8	P/P	30 - 160
2218029	Pyraclostrobin	78.3	77.3	P/P	30 - 160
2218029	Thiamethoxam	119	121	P/P	30 - 160
2218029	Tolfenpyrad	47.5	50.9	P/P	30 - 160
2218029	Triclopyr	90.1	97.1	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P392366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218366	Acesulfame K	60.7	59.0	P/P	40 - 150
2218366	AMPA	71.3	71.2	P/P	40 - 150
2218366	Endothall	102	97.2	P/P	40 - 150
2218366	Glufosinate	88.2	93.8	P/P	40 - 150
2218366	Glyphosate	112	119	P/P	40 - 140
2218366	Sucralose	98.4	93.6	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218285	Fluoride	96.3	96.9	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P392392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218283	Organic Carbon	107	106	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P392278

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218331	Turbidity	1.39	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392428

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2219222	Barium	1.87	Spike	P	0 - 20
2219222	Calcium	0.448	Spike	P	0 - 20
2219222	Iron	0.572	Spike	P	0 - 20
2219222	Magnesium	0.427	Spike	P	0 - 20
2219222	Manganese	1.60	Spike	P	0 - 20
2219222	Potassium	3.36	Spike	P	0 - 20
2219222	Sodium	1.89	Spike	P	0 - 20
2219222	Zinc	1.62	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392428

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2219222	Aluminum	0.488	Spike	P	0 - 20
2219222	Antimony	0.378	Spike	P	0 - 20
2219222	Arsenic	0.847	Spike	P	0 - 20
2219222	Boron	3.17	Spike	P	0 - 20
2219222	Cadmium	4.37	Spike	P	0 - 20
2219222	Chromium	0.143	Spike	P	0 - 20
2219222	Copper	0.477	Spike	P	0 - 20
2219222	Lead	0.0331	Spike	P	0 - 20
2219222	Nickel	1.02	Spike	P	0 - 20
2219222	Selenium	0.212	Spike	P	0 - 20
2219222	Silver	1.24	Spike	P	0 - 20
2219222	Thallium	0.313	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392554

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218293	Chloride	1.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392559

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218293	Sulfate	2.28	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P392776

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218298	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393173

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218602	Ammonia-N	0.283	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P392765

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218300	Kjeldahl Nitrogen	0.412	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P392766

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218369	Kjeldahl Nitrogen	4.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P392606

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218300	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P392493

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218277	Total-P	3.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P392563

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218332	Total-P	1.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P392286

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218284	O-Phosphate-P	0.292	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8276

Batch ID: P392264

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218379	Chlordane	3.27	Spike	P	0 - 30
2218379	Toxaphene	5.55	Spike	P	0 - 30
LFB	Chlordane	1.52	LCS	P	0 - 30
LFB	Toxaphene	2.13	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P392244

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218029	2,4-D	8.02	Spike	P	0 - 30
2218029	Acetaminophen	9.56	Spike	P	0 - 30
2218029	Acetamiprid	7.51	Spike	P	0 - 30
2218029	Afidopyropen	6.20	Spike	P	0 - 30
2218029	Bentazon	0.968	Spike	P	0 - 30
2218029	Benzovindiflupyr	3.44	Spike	P	0 - 30
2218029	Carbamazepine	1.91	Spike	P	0 - 30
2218029	Clothianidin	8.32	Spike	P	0 - 30
2218029	Dinotefuran	0.374	Spike	P	0 - 30
2218029	Diuron	2.25	Spike	P	0 - 30
2218029	Fenuron	1.89	Spike	P	0 - 30
2218029	Fluridone	10.8	Spike	P	0 - 30
2218029	Hydrocodone	3.79	Spike	P	0 - 30
2218029	Ibuprofen	5.51	Spike	P	0 - 30
2218029	Imazapyr	8.29	Spike	P	0 - 30
2218029	Imidacloprid	9.27	Spike	P	0 - 30
2218029	Linuron	2.11	Spike	P	0 - 30
2218029	Mandestrobin	4.47	Spike	P	0 - 30
2218029	MCP	5.71	Spike	P	0 - 30
2218029	Naproxen	21.4	Spike	P	0 - 30
2218029	Primidone	5.74	Spike	P	0 - 30
2218029	Pyraclostrobin	1.26	Spike	P	0 - 30
2218029	Thiamethoxam	1.71	Spike	P	0 - 30
2218029	Tolfenpyrad	7.00	Spike	P	0 - 30
2218029	Triclopyr	7.46	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P392366

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218366	Acesulfame K	2.81	Spike	P	0 - 30
2218366	AMPA	0.205	Spike	P	0 - 30
2218366	Endothall	4.41	Spike	P	0 - 30
2218366	Glufosinate	6.07	Spike	P	0 - 30
2218366	Glyphosate	6.62	Spike	P	0 - 30
2218366	Sucralose	4.92	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P392309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218295	Color (true)	3.83	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P392572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218285	Total Alkalinity	0.333	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P392807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218328	TDS	3.74	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P392578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218285	Fluoride	0.477	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P392392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218283	Organic Carbon	0.837	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2218366
Field Sample ID: G1SD0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.2	P	30 - 160
EPA 8321B	Diuron-d6	39.0	P	30 - 160
EPA 8321B	Endothall-d6	87.4	P	40 - 160
EPA 8321B	Endothall-d6	87.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	79.1	P	30 - 160
EPA 8321B	Sucralose-d6	95.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.8	P	30 - 160

Lab Sample ID: 2218379
Field Sample ID: G1SD0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	59.0	P	29 - 92.0
EPA 8276	PCNB	79.4	P	43 - 134

Quality Assurance Report

Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103013

Included Lab Sample IDs: 2218328, 2218331, 2218334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103015

Included Lab Sample IDs: 2218330, 2218333, 2218336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	98.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103024

Included Lab Sample IDs: 2218328, 2218331, 2218334

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

Reference Method: SM 5310 B-2011

Run ID: A103061

Included Lab Sample IDs: 2218329, 2218332, 2218335

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

Reference Method: EPA 8321B

Run ID: A103082

Included Lab Sample IDs: 2218366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	108	P/P	50 - 150
Acetaminophen	97.4	111	P/P	60 - 160
Acetamiprid	102	104	P/P	50 - 150
Afidopyropen	93.9	82.6	P/P	50 - 150
Bentazon	122	115	P/P	50 - 160
Benzovindiflupyr	108	107	P/P	50 - 160
Carbamazepine	112	113	P/P	60 - 150
Clothianidin	115	109	P/P	60 - 150
Dinotefuran	106	101	P/P	50 - 150
Diuron	113	120	P/P	60 - 160
Fenuron	101	111	P/P	60 - 150
Fluridone	111	104	P/P	60 - 160
Hydrocodone	119	111	P/P	60 - 150
Ibuprofen	87.5	107	P/P	50 - 160
Imazapyr	91.9	103	P/P	50 - 160
Imidacloprid	103	95.2	P/P	60 - 150
Linuron	99.6	108	P/P	60 - 150
Mandestrobin	106	104	P/P	50 - 150
MCPP	101	100	P/P	50 - 150
Naproxen	124	87.8	P/P	50 - 160
Primidone	95.1	104	P/P	60 - 150
Pyraclostrobin	113	106	P/P	60 - 150
Thiamethoxam	114	110	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A103082
Included Lab Sample IDs: 2218366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tolfenpyrad	99.6	107	P/P	60 - 150
Triclopyr	105	102	P/P	50 - 150

Reference Method: EPA 8276
Run ID: A103096
Included Lab Sample IDs: 2218379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	96.4		P	80 - 120
Toxaphene	102		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103099
Included Lab Sample IDs: 2218380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.9	101	P/P	90 - 110
Calcium	99.2	98.7	P/P	90 - 110
Iron	98.5	98.9	P/P	90 - 110
Magnesium	99.4	98.6	P/P	90 - 110
Manganese	102	104	P/P	90 - 110
Potassium	100	99.2	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A103109
Included Lab Sample IDs: 2218329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A103122
Included Lab Sample IDs: 2218366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	74.1	60.4	P/P	60 - 160
AMPA	108	100	P/P	60 - 160
Endothall	101	96.5	P/P	60 - 160
Glufosinate	94.1	84.6	P/P	60 - 160
Glyphosate	148	136	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A103125
Included Lab Sample IDs: 2218328, 2218331, 2218334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103127

Included Lab Sample IDs: 2218328, 2218331, 2218334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	91.1	93.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103127

Included Lab Sample IDs: 2218328, 2218331, 2218334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103135

Included Lab Sample IDs: 2218329, 2218332, 2218335

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103137

Included Lab Sample IDs: 2218332, 2218335

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

Reference Method: EPA 8321B

Run ID: A103189

Included Lab Sample IDs: 2218366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.6	91.3	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103197

Included Lab Sample IDs: 2218329, 2218332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	97.1	P/P	90 - 110
Ammonia-N	98.3	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103216

Included Lab Sample IDs: 2218329, 2218332, 2218335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	97.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103222

Included Lab Sample IDs: 2218380

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103222

Included Lab Sample IDs: 2218380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.8	98.7	P/P	90 - 110
Antimony	100	98.3	P/P	90 - 110
Arsenic	99.0	96.6	P/P	90 - 110
Boron	103	110	P/P	90 - 110
Chromium	106	104	P/P	90 - 110
Copper	95.5	93.8	P/P	90 - 110
Lead	99.9	99.4	P/P	90 - 110
Nickel	97.2	95.3	P/P	90 - 110
Selenium	98.0	98.3	P/P	90 - 110
Silver	106	104	P/P	90 - 110
Thallium	102	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103250

Included Lab Sample IDs: 2218380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	96.8	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103329

Included Lab Sample IDs: 2218335

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	96.7	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							1.39	
EPA 200.7 Rev. 4.4	Barium	99.0		101	101	103			1.87
	Calcium	104		102	107	108			0.448
	Iron	102		108	106	106			0.572
	Magnesium	103		108	105	106			0.427
	Manganese	100		102	101	103			1.60
	Potassium	100		103	102	106			3.36
	Sodium	105		104	103				1.89
	Zinc	99.6		102	99.5	101			1.62
EPA 200.8 Rev. 5.4	Aluminum	98.7		96.4	96.9	96.0			0.488
	Antimony	105		104	103	100			0.378
	Arsenic	101		99.6	98.7	97.0			0.847
	Boron	98.7		96.1	99.9	89.8			3.17
	Cadmium	99.9		96.2	92.1	93.4			4.37
	Chromium	107		103	103	103			0.143
	Copper	96.6		96.5	96.1	93.9			0.477
	Lead	103		103	103	102			0.0331
	Nickel	98.0		97.9	96.9	95.4			1.02
	Selenium	100		96.6	96.8	96.0			0.212
	Silver	109		110	109	106			1.24
	Thallium	102		102	102	103			0.313
EPA 300.0 Rev. 2.1	Chloride	101		98.7	101			1.33	
	Sulfate	101		101	105			2.28	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6		96.0	97.6				1.49
	Ammonia-N	98.0		96.6	96.2				0.283
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3		109	110				0.412
	Kjeldahl Nitrogen	104		105	96.8				4.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		97.1	98.1				0.948
EPA 365.1 Rev. 2.0	Total-P	106		108	104				3.28
	Total-P	104		102	99.6				1.85
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		102	103				0.292
EPA 8276	Chlordane	96.4	97.9	96.1	99.3		1.52		3.27
	Toxaphene	101	103	132	140		2.13		5.55
EPA 8321B	2,4-D	104		118	109				8.02
	Acesulfame K	65.7		60.7	59.0				2.81
	Acetaminophen	77.5		91.3	83.0				9.56
	Acetamiprid	79.6		97.5	90.4				7.51
	Afidopyropen	64.8		71.1	66.8				6.20
	AMPA	89.7		71.3	71.2				0.205
	Bentazon	83.9		66.0	66.7				0.968
	Benzovindiflupyr	71.4		78.2	75.6				3.44
	Carbamazepine	77.8		78.1	76.6				1.91
	Clothianidin	74.4		101	93.0				8.32
	Dinotefuran	78.5		103	103				0.374
	Diuron	54.2		51.8	53.0				2.25
	Endothall	95.7		102	97.2				4.41
	Fenuron	81.4		89.1	90.8				1.89
	Fluridone	76.3		80.9	72.6				10.8
	Glufosinate	98.6		88.2	93.8				6.07
	Glyphosate	138		112	119				6.62
	Hydrocodone	88.1		103	107				3.79
	Ibuprofen	71.3		83.8	88.6				5.51
	Imazapyr	77.1		123	113				8.29
	Imidacloprid	90.7		131	144				9.27

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	72.8	65.3	66.6		2.11
	Mandestrobin	76.7	86.8	83.0		4.47
	MCCP	82.8	102	95.9		5.71
	Naproxen	59.5	66.3	82.2		21.4
	Primidone	77.3	95.1	89.8		5.74
	Pyraclostrobin	70.4	78.3	77.3		1.26
	Sucralose	97.4	98.4	93.6		4.92
	Thiamethoxam	90.4	119	121		1.71
	Tolfenpyrad	39.7	47.5	50.9		7.00
	Triclopyr	77.6	90.1	97.1		7.46
SM 2120 B-2011	Color (true)	102			3.83	
SM 2320 B-2011	Total Alkalinity	95.9			0.333	
SM 2540 C-2011	TDS				3.74	
SM 4500 F-C-2011	Fluoride	95.7	96.3	96.9		0.477
SM 5310 B-2011	Organic Carbon	103	107	106		0.837

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2218328, 2218331, 2218334
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2218380
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2218380
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2218328, 2218331, 2218334
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2218328, 2218331, 2218334
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2218329, 2218332, 2218335
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2218329, 2218332, 2218335
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2218329, 2218332, 2218335
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2218329, 2218332, 2218335
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2218330, 2218333, 2218336
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2218379
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2218366
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2218366
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2218328, 2218331, 2218334
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2218328, 2218331, 2218334
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2218380
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2218328, 2218331, 2218334
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2218328, 2218331, 2218334
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2218328, 2218331, 2218334
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2218329, 2218332, 2218335

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/12/2021			01/12/2021 16:44	Julia Storbeck	2218328, 2218331, 2218334
EPA 200.7 Rev. 4.4	01/12/2021	01/14/2021 17:00	Elliott D. Healy	01/15/2021 15:48	Betina Topolski	2218380
EPA 200.8 Rev. 5.4	01/12/2021	01/14/2021 17:00	Elliott D. Healy	01/25/2021 17:01	Alexander Thompson	2218380
	01/12/2021	01/14/2021 17:00	Elliott D. Healy	01/26/2021 13:39	Alexander Thompson	2218380
EPA 300.0 Rev. 2.1	01/12/2021			01/16/2021 02:58	Julia Storbeck	2218328
	01/12/2021			01/16/2021 03:11	Julia Storbeck	2218331
	01/12/2021			01/16/2021 03:22	Julia Storbeck	2218334
EPA 350.1 Rev. 2.0	01/12/2021			01/23/2021 12:16	Ping Hua	2218329
	01/12/2021			01/23/2021 13:29	Ping Hua	2218332
	01/12/2021			01/31/2021 14:26	Ping Hua	2218335
EPA 351.2 Rev. 2.0	01/12/2021	01/22/2021 13:26	Yen Ta	01/25/2021 14:12	Julia Storbeck	2218329
	01/12/2021	01/22/2021 13:26	Yen Ta	01/25/2021 14:17	Julia Storbeck	2218332
	01/12/2021	01/22/2021 13:26	Yen Ta	01/25/2021 14:19	Julia Storbeck	2218335
EPA 353.2 Rev. 2.0	01/12/2021			01/20/2021 09:40	Beverly Y. Sanders	2218329
	01/12/2021			01/20/2021 09:41	Beverly Y. Sanders	2218332
	01/12/2021			01/20/2021 09:42	Beverly Y. Sanders	2218335
EPA 365.1 Rev. 2.0	01/12/2021	01/15/2021 19:22	Madeline Gruver	01/19/2021 13:27	Shengyu Wang	2218329
	01/12/2021	01/19/2021 19:48	Madeline Gruver	01/20/2021 11:29	Lipi Saha	2218332
	01/12/2021	01/19/2021 19:48	Madeline Gruver	01/20/2021 11:35	Lipi Saha	2218335
EPA 365.1 Rev. 2.0 dissolved	01/12/2021			01/12/2021 17:58	Virginia P. Brown	2218330
	01/12/2021			01/12/2021 17:59	Virginia P. Brown	2218333
	01/12/2021			01/12/2021 18:00	Virginia P. Brown	2218336
EPA 8276	01/12/2021	01/14/2021 08:30	Rasheda Ghaffari	01/16/2021 04:30	Michael Poppell	2218379
EPA 8321B	01/12/2021	01/14/2021 09:00	Hoor Shaik	01/15/2021 06:14	Juyoung Kim	2218366
	01/12/2021	01/14/2021 09:00	Hoor Shaik	01/15/2021 13:45	Juyoung Kim	2218366
	01/12/2021	01/14/2021 10:30	Rebecca Ware	01/14/2021 11:54	Rebecca Ware	2218366
	01/12/2021	01/14/2021 10:30	Rebecca Ware	01/21/2021 01:35	Rebecca Ware	2218366
SM 2120 B-2011	01/12/2021			01/12/2021 18:07	Benjamin T. Nordmann	2218328
	01/12/2021			01/12/2021 18:08	Benjamin T. Nordmann	2218331
	01/12/2021			01/12/2021 18:09	Benjamin T. Nordmann	2218334
SM 2320 B-2011	01/12/2021			01/15/2021 07:13	Dale L. Simmons	2218328
	01/12/2021			01/15/2021 07:27	Dale L. Simmons	2218331
	01/12/2021			01/15/2021 07:40	Dale L. Simmons	2218334
SM 2340B	01/12/2021			01/15/2021 15:48	Betina Topolski	2218380
SM 2540 C-2011	01/12/2021			01/15/2021 15:02	Yijie Li	2218328, 2218331, 2218334
SM 2540 D-2011	01/12/2021			01/15/2021 15:02	Yijie Li	2218328, 2218331, 2218334
SM 4500 F-C-2011	01/12/2021			01/15/2021 07:13	Dale L. Simmons	2218328
	01/12/2021			01/15/2021 07:27	Dale L. Simmons	2218331
	01/12/2021			01/15/2021 07:40	Dale L. Simmons	2218334
SM 5310 B-2011	01/12/2021			01/14/2021 05:14	Madeline Gruver	2218329

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/12/2021			01/14/2021 05:26	Madeline Gruver	2218332
	01/12/2021			01/14/2021 05:38	Madeline Gruver	2218335