

Chemical Analysis Report

NE-DIST-2021-02-26-02

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

Event Description: **LSJR Lake 2021**
Request ID: **RQ-2021-02-22-21**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-MAR-2021 10:00



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: Lake Broward South

Collection Date/Time: 02/25/2021 13:25

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227997	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P394281	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P394554	
		Sulfate	10		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	16	A	PCU	P394289	
	SM 2320 B-2011	Total Alkalinity	3.7		mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	50		mg/L	P394806	
	SM 2540 D-2011	TSS	2	U	mg/L	P394827	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394517	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P394443	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P394540	
2227999	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P394458	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P394472	
	SM 5310 B-2011	Organic Carbon	6.1		mg C/L	P394896	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394285	
	EPA 8321B	2,4-D	0.075		ug/L	P394255	
2228001		Acesulfame K	0.10	U	ug/L	P394312	
		2,4,5-T	0.0040	U	ug/L	P394255	
		AMPA	0.10	U	ug/L	P394312	
		Sucralose	0.41		ug/L	P394312	
		Acetaminophen**	0.0080	U	ug/L	P394255	
		Acetamiprid**	0.0020	U	ug/L	P394255	
		Endothall	0.25	U	ug/L	P394312	
		Glufosinate	0.10	U	ug/L	P394312	
		Glyphosate	0.10	U	ug/L	P394312	
		Afidopyropen**	0.0020	U	ug/L	P394255	
		Bentazon	8.0E-04	U	ug/L	P394255	
		Benzovindiflupyr**	0.0020	U	ug/L	P394255	
		Carbamazepine**	8.0E-04	U	ug/L	P394255	
		Clothianidin**	0.0020	U	ug/L	P394255	
		Dinotefuran**	0.0020	U	ug/L	P394255	
		Diuron	0.0020	U	ug/L	P394255	
		Fenuron	0.016	U	ug/L	P394255	
		Fluridone**	0.0093		ug/L	P394255	
		Imazapyr**	0.16		ug/L	P394255	
		Hydrocodone**	0.0020	U	ug/L	P394255	
		Ibuprofen**	0.020	U	ug/L	P394255	
		Imidacloprid	0.0020	U	ug/L	P394255	
		Linuron	0.0040	U	ug/L	P394255	
		Mandestrobin**	0.0020	U	ug/L	P394255	
		MCPP	0.0020	U	ug/L	P394255	
		Naproxen**	0.0080	U	ug/L	P394255	
		Primidone**	0.0040	U	ug/L	P394255	
		Pyraclostrobin**	0.0020	U	ug/L	P394255	

Field ID: G2NE1218

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2228008	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P394255		
		Tolfenpyrad**	0.0020	U	ug/L	P394255		
		Triclopyr**	0.0040	U	ug/L	P394255		
2228010	EPA 200.7 Rev. 4.4	Barium	10.8		ug/L	P394326		
		Calcium	4.74		mg/L	P394326		
		Iron	37	I	ug/L	P394326		
		Magnesium	1.49		mg/L	P394326		
		Manganese	6.5		ug/L	P394326		
		Potassium	1.1	I	mg/L	P394326		
		Sodium	8.9		mg/L	P394326		
		Zinc	5.0	U	ug/L	P394326		
		EPA 200.8 Rev. 5.4	Aluminum	35		ug/L	P394326	
			Antimony	0.068	I	ug/L	P394326	
	Arsenic		2.67		ug/L	P394326		
	Beryllium		0.010	U	ug/L	P394326		
	Boron**		28.9		ug/L	P394326		
	Cadmium		0.020	U	ug/L	P394326		
	Chromium		0.40	U	ug/L	P394326		
	Copper		0.55	I	ug/L	P394326		
	Lead		0.20	U	ug/L	P394326		
	Nickel		0.50	U	ug/L	P394326		
	Selenium		0.20	U	ug/L	P394326		
	Silver		0.010	U	ug/L	P394326		
	Thallium		0.10	U	ug/L	P394326		
	SM 2340B		Hardness	18.0		mg/L	P394326	

Ref. Method and Comment:

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

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

Sample Location: Lake Broward North

Collection Date/Time: 02/25/2021 13:00

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227998	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P394281	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P394554	
		Sulfate	11		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	7.2		PCU	P394289	
	SM 2320 B-2011	Total Alkalinity	2.2	I	mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	49		mg/L	P394806	
	SM 2540 D-2011	TSS	2	U	mg/L	P394827	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394517	
2228000	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P394443	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P394540	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P394458	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P394472	
	SM 5310 B-2011	Organic Carbon	4.9		mg C/L	P394896	
2228002	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394285	
2228009	EPA 8321B	2,4-D	0.11		ug/L	P394255	
		Acesulfame K	0.10	U	ug/L	P394312	
		2,4,5-T	0.0040	U	ug/L	P394255	
		AMPA	0.10	U	ug/L	P394312	
		Sucralose	0.25		ug/L	P394312	
		Acetaminophen**	0.0080	U	ug/L	P394255	
		Acetamiprid**	0.0020	U	ug/L	P394255	
		Endothall	0.25	U	ug/L	P394312	
		Glufosinate	0.10	U	ug/L	P394312	
		Glyphosate	0.10	U	ug/L	P394312	
		Afidopyropen**	0.0020	U	ug/L	P394255	
		Bentazon	8.0E-04	U	ug/L	P394255	
		Benzovindiflupyr**	0.0020	U	ug/L	P394255	
		Carbamazepine**	8.0E-04	U	ug/L	P394255	
		Clothianidin**	0.0020	U	ug/L	P394255	
		Dinotefuran**	0.0020	U	ug/L	P394255	
		Diuron	0.0020	U	ug/L	P394255	
		Fenuron	0.016	U	ug/L	P394255	
		Fluridone**	0.0014	I	ug/L	P394255	
		Imazapyr**	0.012	I	ug/L	P394255	
		Hydrocodone**	0.0020	U	ug/L	P394255	
		Ibuprofen**	0.020	U	ug/L	P394255	
		Imidacloprid	0.0020	U	ug/L	P394255	
		Linuron	0.0040	U	ug/L	P394255	
		Mandestrobin**	0.0020	U	ug/L	P394255	
		MCP	0.0020	U	ug/L	P394255	
		Naproxen**	0.0080	U	ug/L	P394255	
		Primidone**	0.0040	U	ug/L	P394255	
		Pyraclostrobin**	0.0020	U	ug/L	P394255	

Field ID: G2NE1219

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2228009	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P394255	
		Tolfenpyrad**	0.0020	U	ug/L	P394255	
		Triclopyr**	0.0040	U	ug/L	P394255	
2228011	EPA 200.7 Rev. 4.4	Barium	10.9		ug/L	P394326	
		Calcium	4.28		mg/L	P394326	
		Iron	30	U	ug/L	P394326	
		Magnesium	1.63		mg/L	P394326	
		Manganese	2.0	I	ug/L	P394326	
		Potassium	1.2		mg/L	P394326	
		Sodium	9.6		mg/L	P394326	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P394326	
		Aluminum	46		ug/L	P394326	
		Antimony	0.089	I	ug/L	P394326	
		Arsenic	1.98		ug/L	P394326	
		Beryllium	0.010	U	ug/L	P394326	
		Boron**	30.3		ug/L	P394326	
		Cadmium	0.020	U	ug/L	P394326	
		Chromium	0.40	U	ug/L	P394326	
		Copper	0.41	I	ug/L	P394326	
		Lead	0.20	I	ug/L	P394326	
		Nickel	0.50	U	ug/L	P394326	
		Selenium	0.20	U	ug/L	P394326	
		Silver	0.010	U	ug/L	P394326	
		Thallium	0.10	U	ug/L	P394326	
	SM 2340B	Hardness	17.4		mg/L	P394326	

Ref. Method and Comment:

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

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

Sample Location: Silver Lake Center

Collection Date/Time: 02/25/2021 10:55

Field ID: G2NE1132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227994	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P394281	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P394554	
		Sulfate	4.3		mg SO4/L	P394555	
	SM 2120 B-2011	Color (true)	490		PCU	P394289	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P394514	
	SM 2540 C-2011	TDS	91		mg/L	P394805	
	SM 2540 D-2011	TSS	2	U	mg/L	P394826	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394517	
2227995	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P394443	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P394540	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P394458	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P394472	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P394896	
2227996	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P394285	

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: P394281

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394326

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: P394326

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394554

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394443

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: P394540

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394458

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

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

Reference Method: EPA 8321B
Batch ID: P394255

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P394312

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: P394289

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P394514

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

Reference Method: SM 2540 C-2011
Batch ID: P394805

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P394806

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394826

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394827

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P394896

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: P394326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	111		P	85 - 115
Iron	106		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	101		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.6		P	85 - 115
Antimony	98.0		P	85 - 115
Arsenic	98.2		P	85 - 115
Beryllium	89.7		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	95.3		P	85 - 115
Copper	96.2		P	85 - 115
Lead	104		P	85 - 115
Nickel	96.2		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394554

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

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 353.2 Rev. 2.0

Batch ID: P394458

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394472

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: P394285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P394255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	129		P	30 - 160
2,4,5-T	106		P	30 - 160
Acetaminophen	138		P	30 - 160
Acetamiprid	90.7		P	30 - 160
Afidopyropen	72.0		P	30 - 160
Bentazon	88.6		P	30 - 160
Benzovindiflupyr	96.6		P	30 - 160
Carbamazepine	124		P	30 - 160
Clothianidin	125		P	30 - 160
Dinotefuran	109		P	30 - 160
Diuron	73.9		P	30 - 160
Fenuron	110		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	110		P	30 - 160
Ibuprofen	77.9		P	30 - 160
Imazapyr	115		P	30 - 160
Imidacloprid	133		P	30 - 160
Linuron	97.6		P	30 - 160
Mandestrobin	102		P	30 - 160
MCPP	129		P	30 - 160
Naproxen	77.1		P	30 - 160
Primidone	130		P	30 - 160
Pyraclostrobin	92.7		P	30 - 160
Thiamethoxam	122		P	30 - 160
Tolfenpyrad	63.3		P	30 - 160
Triclopyr	111		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	99.0		P	40 - 150
Endothall	96.7		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P394312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glufosinate	105		P	40 - 150
Glyphosate	70.8		P	40 - 140
Sucralose	118		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P394289

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

Reference Method: SM 2320 B-2011
Batch ID: P394514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.2		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394896

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227481	Barium	103		P	80 - 120
2227481	Calcium	105		P	80 - 120
2227481	Iron	104		P	80 - 120
2227481	Magnesium	102		P	80 - 120
2227481	Manganese	102		P	80 - 120
2227481	Potassium	101		P	80 - 120
2227481	Sodium	105		P	80 - 120
2227481	Zinc	106		P	80 - 120
2228011	Barium	103	100	P/P	80 - 120
2228011	Calcium	105		P	80 - 120
2228011	Iron	106	103	P/P	80 - 120
2228011	Magnesium	102	99.0	P/P	80 - 120
2228011	Manganese	102	99.3	P/P	80 - 120
2228011	Potassium	102	98.5	P/P	80 - 120
2228011	Sodium	102		P	80 - 120
2228011	Zinc	110	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227481	Aluminum	93.1		P	80 - 120
2227481	Antimony	98.1		P	80 - 120
2227481	Arsenic	95.3		P	80 - 120
2227481	Beryllium	89.4		P	80 - 120
2227481	Boron	98.0		P	80 - 120
2227481	Cadmium	98.6		P	80 - 120
2227481	Chromium	94.7		P	80 - 120
2227481	Copper	95.1		P	80 - 120
2227481	Lead	105		P	80 - 120
2227481	Nickel	94.7		P	80 - 120
2227481	Selenium	91.1		P	80 - 120
2227481	Silver	102		P	80 - 120
2227481	Thallium	105		P	80 - 120
2228011	Aluminum	92.3	91.0	P/P	80 - 120
2228011	Antimony	97.0	94.7	P/P	80 - 120
2228011	Arsenic	94.9	94.4	P/P	80 - 120
2228011	Beryllium	91.7	89.4	P/P	80 - 120
2228011	Boron	93.6	93.0	P/P	80 - 120
2228011	Cadmium	96.7	95.1	P/P	80 - 120
2228011	Chromium	94.8	93.6	P/P	80 - 120
2228011	Copper	94.4	92.9	P/P	80 - 120
2228011	Lead	104	100	P/P	80 - 120
2228011	Nickel	94.2	93.4	P/P	80 - 120
2228011	Selenium	93.8	92.7	P/P	80 - 120
2228011	Silver	100	101	P/P	80 - 120
2228011	Thallium	105	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227613	Chloride	99.5		P	90 - 110
2227994	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227613	Sulfate	96.1		P	90 - 110
2227994	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227999	Ammonia-N	96.2	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227999	Kjeldahl Nitrogen	108	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227999	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227935	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227893	O-Phosphate-P	98.7	98.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P394255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227432	2,4-D	83.5	84.2	P/P	30 - 160
2227432	2,4,5-T	73.1	68.7	P/P	30 - 160
2227432	Acetaminophen	92.5	104	P/P	30 - 160
2227432	Acetamiprid	87.6	92.6	P/P	30 - 160
2227432	Afidopyropen	78.4	73.5	P/P	30 - 160
2227432	Benzovindiflupyr	70.1	73.0	P/P	30 - 160
2227432	Carbamazepine	85.1	91.6	P/P	30 - 160
2227432	Clothianidin	96.3	102	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P394255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227432	Dinotefuran	119	126	P/P	30 - 160
2227432	Diuron	39.7	38.3	P/P	30 - 160
2227432	Fenuron	72.8	63.4	P/P	30 - 160
2227432	Fluridone	79.6	78.2	P/P	30 - 160
2227432	Hydrocodone	98.0	101	P/P	30 - 160
2227432	Ibuprofen	63.4	67.5	P/P	30 - 160
2227432	Imazapyr	60.2	62.0	P/P	30 - 160
2227432	Imidacloprid	152	150	P/P	30 - 160
2227432	Linuron	72.8	71.5	P/P	30 - 160
2227432	Mandestrobin	83.8	86.9	P/P	30 - 160
2227432	MCPP	91.9	88.5	P/P	30 - 160
2227432	Naproxen	71.4	57.7	P/P	30 - 160
2227432	Primidone	94.5	89.4	P/P	30 - 160
2227432	Pyraclostrobin	82.0	77.9	P/P	30 - 160
2227432	Thiamethoxam	133	141	P/P	30 - 160
2227432	Tolfenpyrad	58.5	58.0	P/P	30 - 160
2227432	Triclopyr	83.1	76.9	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227562	Acesulfame K	131	147	P/P	40 - 150
2227562	AMPA	110	120	P/P	40 - 150
2227562	Endothall	129	103	P/P	40 - 150
2227562	Glufosinate	96.3	106	P/P	40 - 150
2227562	Glyphosate	54.7	61.0	P/P	40 - 140
2227562	Sucralose	127	129	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P394517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227922	Fluoride	96.6	96.6	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P394896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227925	Organic Carbon	95.4	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P394281

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227964	Turbidity	6.25	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228011	Barium	2.52	Spike	P	0 - 20
2228011	Calcium	3.03	Spike	P	0 - 20
2228011	Iron	2.27	Spike	P	0 - 20
2228011	Magnesium	2.29	Spike	P	0 - 20
2228011	Manganese	2.65	Spike	P	0 - 20
2228011	Potassium	2.57	Spike	P	0 - 20
2228011	Sodium	2.38	Spike	P	0 - 20
2228011	Zinc	2.58	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228011	Aluminum	1.33	Spike	P	0 - 20
2228011	Antimony	2.36	Spike	P	0 - 20
2228011	Arsenic	0.478	Spike	P	0 - 20
2228011	Beryllium	2.51	Spike	P	0 - 20
2228011	Boron	0.486	Spike	P	0 - 20
2228011	Cadmium	1.64	Spike	P	0 - 20
2228011	Chromium	1.28	Spike	P	0 - 20
2228011	Copper	1.62	Spike	P	0 - 20
2228011	Lead	3.39	Spike	P	0 - 20
2228011	Nickel	0.919	Spike	P	0 - 20
2228011	Selenium	1.13	Spike	P	0 - 20
2228011	Silver	0.493	Spike	P	0 - 20
2228011	Thallium	2.40	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394554

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227613	Chloride	1.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394555

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227613	Sulfate	1.09	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227999	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227999	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227999	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227935	Total-P	0.278	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227893	O-Phosphate-P	0.0896	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P394255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227432	2,4-D	0.711	Spike	P	0 - 30
2227432	2,4,5-T	6.15	Spike	P	0 - 30
2227432	Acetaminophen	12.1	Spike	P	0 - 30
2227432	Acetamiprid	5.54	Spike	P	0 - 30
2227432	Afidopyropen	6.53	Spike	P	0 - 30
2227432	Bentazon	5.93	Spike	P	0 - 30
2227432	Benzovindiflupyr	4.08	Spike	P	0 - 30
2227432	Carbamazepine	7.35	Spike	P	0 - 30
2227432	Clothianidin	5.34	Spike	P	0 - 30
2227432	Dinotefuran	6.11	Spike	P	0 - 30
2227432	Diuron	3.27	Spike	P	0 - 30
2227432	Fenuron	13.8	Spike	P	0 - 30
2227432	Fluridone	1.20	Spike	P	0 - 30
2227432	Hydrocodone	3.20	Spike	P	0 - 30
2227432	Ibuprofen	6.31	Spike	P	0 - 30
2227432	Imazapyr	1.49	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P394255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227432	Imidacloprid	1.07	Spike	P	0 - 30
2227432	Linuron	1.71	Spike	P	0 - 30
2227432	Mandestrobin	3.64	Spike	P	0 - 30
2227432	MCPP	3.74	Spike	P	0 - 30
2227432	Naproxen	21.3	Spike	P	0 - 30
2227432	Primidone	5.58	Spike	P	0 - 30
2227432	Pyraclostrobin	5.10	Spike	P	0 - 30
2227432	Thiamethoxam	5.73	Spike	P	0 - 30
2227432	Tolfenpyrad	0.950	Spike	P	0 - 30
2227432	Triclopyr	7.75	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227562	Acesulfame K	11.4	Spike	P	0 - 30
2227562	AMPA	9.24	Spike	P	0 - 30
2227562	Endothall	23.0	Spike	P	0 - 30
2227562	Glufosinate	9.82	Spike	P	0 - 30
2227562	Glyphosate	10.8	Spike	P	0 - 30
2227562	Sucralose	1.64	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P394289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227997	Color (true)	3.47	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227922	Total Alkalinity	1.30	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P394805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227923	TDS	4.35	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P394806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227604	TDS	5.86	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P394517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227922	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227925	Organic Carbon	0.939	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2228008
Field Sample ID: G2NE1218

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.5	P	30 - 160
EPA 8321B	Diuron-d6	57.0	P	30 - 160
EPA 8321B	Endothall-d6	83.8	P	40 - 160
EPA 8321B	Endothall-d6	83.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	40 - 160
EPA 8321B	Ibuprofen-d3	64.6	P	30 - 160
EPA 8321B	Primidone-d5	88.3	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160

Lab Sample ID: 2228009
Field Sample ID: G2NE1219

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.9	P	30 - 160
EPA 8321B	Diuron-d6	60.2	P	30 - 160
EPA 8321B	Endothall-d6	86.9	P	40 - 160
EPA 8321B	Endothall-d6	86.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	111	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	111	P	40 - 160
EPA 8321B	Ibuprofen-d3	64.3	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103799

Included Lab Sample IDs: 2227994, 2227997, 2227998

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103803

Included Lab Sample IDs: 2227996, 2228001, 2228002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.5	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103804

Included Lab Sample IDs: 2227994, 2227997, 2227998

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103842

Included Lab Sample IDs: 2227994, 2227997, 2227998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Chloride	100	101	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103843

Included Lab Sample IDs: 2228008, 2228009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.9	79.7	P/P	60 - 160
AMPA	97.4	96.5	P/P	60 - 160
Endothall	144	110	P/P	60 - 160
Glufosinate	85.0	116	P/P	60 - 160
Glyphosate	134	132	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103867

Included Lab Sample IDs: 2227995, 2227999, 2228000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.4	P/P	90 - 110
Ammonia-N	99.1	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103873

Included Lab Sample IDs: 2228008, 2228009

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

Reference Method: EPA 8321B

Run ID: A103873

Included Lab Sample IDs: 2228008, 2228009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	91.0	P/P	50 - 150
2,4,5-T	83.5	83.4	P/P	50 - 150
Acetaminophen	98.7	99.0	P/P	60 - 160
Acetamiprid	108	107	P/P	50 - 150
Afidopyropen	106	99.6	P/P	50 - 150
Bentazon	113	107	P/P	50 - 160
Benzovindiflupyr	100	94.9	P/P	50 - 160
Carbamazepine	114	107	P/P	60 - 150
Clothianidin	102	99.7	P/P	60 - 150
Dinotefuran	99.5	108	P/P	50 - 150
Diuron	84.7	84.4	P/P	60 - 160
Fenuron	99.1	97.0	P/P	60 - 150
Fluridone	124	107	P/P	60 - 160
Hydrocodone	103	105	P/P	60 - 150
Ibuprofen	82.9	80.3	P/P	50 - 160
Imazapyr	103	83.5	P/P	50 - 160
Imidacloprid	102	99.7	P/P	60 - 150
Linuron	116	108	P/P	60 - 150
Mandestrobin	109	107	P/P	50 - 150
MCPP	106	105	P/P	50 - 150
Naproxen	83.7	85.6	P/P	50 - 160
Primidone	94.2	110	P/P	60 - 150
Pyraclostrobin	111	107	P/P	60 - 150
Thiamethoxam	103	97.4	P/P	50 - 150
Tolfenpyrad	120	113	P/P	60 - 150
Triclopyr	103	92.7	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103879

Included Lab Sample IDs: 2227995, 2227999, 2228000

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103898

Included Lab Sample IDs: 2228010, 2228011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	99.4	100	P/P	90 - 110
Iron	100	99.9	P/P	90 - 110
Magnesium	99.6	99.4	P/P	90 - 110
Manganese	100	99.0	P/P	90 - 110
Potassium	100	99.2	P/P	90 - 110
Sodium	98.6	98.7	P/P	90 - 110
Zinc	95.2	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103902

Included Lab Sample IDs: 2227994, 2227997, 2227998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	91.5	98.0	P/P	90 - 110
Total Alkalinity	98.0	93.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103902

Included Lab Sample IDs: 2227994, 2227997, 2227998

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

Reference Method: EPA 8321B

Run ID: A103914

Included Lab Sample IDs: 2228008, 2228009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	118	117	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103955

Included Lab Sample IDs: 2228010, 2228011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	98.3	P/P	90 - 110
Aluminum	96.0	99.3	P/P	90 - 110
Antimony	96.2	97.2	P/P	90 - 110
Antimony	96.9	96.7	P/P	90 - 110
Arsenic	97.1	97.8	P/P	90 - 110
Arsenic	98.9	98.5	P/P	90 - 110
Beryllium	96.4	96.0	P/P	90 - 110
Beryllium	97.0	97.3	P/P	90 - 110
Boron	102	104	P/P	90 - 110
Boron	109	103	P/P	90 - 110
Cadmium	98.1	99.0	P/P	90 - 110
Cadmium	99.0	98.4	P/P	90 - 110
Chromium	97.1	96.9	P/P	90 - 110
Chromium	97.6	98.3	P/P	90 - 110
Copper	95.2	95.1	P/P	90 - 110
Copper	98.0	97.5	P/P	90 - 110
Lead	107	108	P/P	90 - 110
Lead	107	108	P/P	90 - 110
Nickel	97.1	97.1	P/P	90 - 110
Nickel	98.5	98.8	P/P	90 - 110
Selenium	96.7	97.3	P/P	90 - 110
Selenium	98.1	98.0	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Silver	102	101	P/P	90 - 110
Thallium	105	106	P/P	90 - 110
Thallium	105	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103963

Included Lab Sample IDs: 2227995, 2227999, 2228000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.8	P/P	90 - 110
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103966

Included Lab Sample IDs: 2227995, 2227999, 2228000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104035

Included Lab Sample IDs: 2227995, 2227999, 2228000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	94.4	P/P	90 - 110
Organic Carbon	95.7	95.4	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								6.25	
EPA 200.7 Rev. 4.4	Barium	101			103	103	100			2.52
	Calcium	111			105	105				3.03
	Iron	106			104	106	103			2.27
	Magnesium	105			102	102	99.0			2.29
	Manganese	101			102	102	99.3			2.65
	Potassium	103			101	102	98.5			2.57
	Sodium	108			105	102				2.38
	Zinc	104			106	110	107			2.58
EPA 200.8 Rev. 5.4	Aluminum	95.6			92.3	91.0	93.1			1.33
	Antimony	98.0			97.0	94.7	98.1			2.36
	Arsenic	98.2			94.9	94.4	95.3			0.478
	Beryllium	89.7			91.7	89.4	89.4			2.51
	Boron	99.4			93.6	93.0	98.0			0.486
	Cadmium	98.0			96.7	95.1	98.6			1.64
	Chromium	95.3			94.8	93.6	94.7			1.28
	Copper	96.2			94.4	92.9	95.1			1.62
	Lead	104			104	100	105			3.39
	Nickel	96.2			94.2	93.4	94.7			0.919
	Selenium	97.6			93.8	92.7	91.1			1.13
	Silver	104			100	101	102			0.493
	Thallium	103			105	102	105			2.40
EPA 300.0 Rev. 2.1	Chloride	100			99.5	101			1.11	
	Sulfate	99.7			96.1	100			1.09	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8			96.2	97.6				1.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104			108	109				1.16
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101			102	102				0.0
EPA 365.1 Rev. 2.0	Total-P	104			102	101				0.278
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7			98.7	98.8				0.0896
EPA 8321B	2,4-D	129			83.5	84.2				0.711
	2,4,5-T	106			73.1	68.7				6.15
	Acesulfame K	105			131	147				11.4
	Acetaminophen	138			92.5	104				12.1
	Acetamiprid	90.7			87.6	92.6				5.54
	Afidopyropen	72.0			78.4	73.5				6.53
	AMPA	99.0			110	120				9.24
	Bentazon	88.6								5.93
	Benzovindiflupyr	96.6			70.1	73.0				4.08
	Carbamazepine	124			85.1	91.6				7.35
	Clothianidin	125			96.3	102				5.34
	Dinotefuran	109			119	126				6.11
	Diuron	73.9			39.7	38.3				3.27
	Endothall	96.7			129	103				23.0
	Fenuron	110			72.8	63.4				13.8
	Fluridone	101			79.6	78.2				1.20
	Glufosinate	105			96.3	106				9.82
	Glyphosate	70.8			54.7	61.0				10.8
	Hydrocodone	110			98.0	101				3.20
	Ibuprofen	77.9			63.4	67.5				6.31
	Imazapyr	115			60.2	62.0				1.49
	Imidacloprid	133			152	150				1.07
	Linuron	97.6			72.8	71.5				1.71
	Mandestrobin	102			83.8	86.9				3.64
	MCPP	129			91.9	88.5				3.74

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	77.1	71.4	57.7		21.3
	Primidone	130	94.5	89.4		5.58
	Pyraclostrobin	92.7	82.0	77.9		5.10
	Sucralose	118	129	127		1.64
	Thiamethoxam	122	133	141		5.73
	Tolfenpyrad	63.3	58.5	58.0		0.950
	Triclopyr	111	83.1	76.9		7.75
SM 2120 B-2011	Color (true)	102			3.47	
SM 2320 B-2011	Total Alkalinity	95.2			1.30	
SM 2540 C-2011	TDS				4.35	
	TDS				5.86	
SM 4500 F-C-2011	Fluoride	97.5	96.6	96.6		0.0
SM 5310 B-2011	Organic Carbon	94.6	95.4	93.8		0.939

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2227994, 2227997, 2227998
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2228010, 2228011
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2228010, 2228011
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2227994, 2227997, 2227998
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2227994, 2227997, 2227998
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2227995, 2227999, 2228000
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2227995, 2227999, 2228000
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2227995, 2227999, 2228000
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2227995, 2227999, 2228000
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2227996, 2228001, 2228002
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2228008, 2228009
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2228008, 2228009
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2227994, 2227997, 2227998
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2227994, 2227997, 2227998
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2228010, 2228011
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2227994, 2227997, 2227998
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2227994, 2227997, 2227998
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2227994, 2227997, 2227998
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2227995, 2227999, 2228000

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	02/26/2021			02/26/2021 17:09	Yen Ta	2227994, 2227997, 2227998
EPA 200.7 Rev. 4.4	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/04/2021 15:21	Betina Topolski	2228010
	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/04/2021 15:29	Betina Topolski	2228011
EPA 200.8 Rev. 5.4	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/08/2021 19:44	Alexander Thompson	2228011
	02/26/2021	03/01/2021 13:35	Elliott D. Healy	03/08/2021 22:21	Alexander Thompson	2228010
EPA 300.0 Rev. 2.1	02/26/2021			03/03/2021 16:26	Lipi Saha	2227994
	02/26/2021			03/03/2021 19:04	Lipi Saha	2227997
	02/26/2021			03/03/2021 19:17	Lipi Saha	2227998
EPA 350.1 Rev. 2.0	02/26/2021			03/03/2021 17:25	Ping Hua	2227999
	02/26/2021			03/03/2021 17:34	Ping Hua	2228000
	02/26/2021			03/03/2021 17:54	Ping Hua	2227995
EPA 351.2 Rev. 2.0	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/09/2021 12:00	Virginia P. Brown	2227995
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/09/2021 12:01	Virginia P. Brown	2227999
	02/26/2021	03/05/2021 12:30	Benjamin T. Nordmann	03/09/2021 12:08	Virginia P. Brown	2228000
EPA 353.2 Rev. 2.0	02/26/2021			03/04/2021 09:37	Beverly Y. Sanders	2227999
	02/26/2021			03/04/2021 09:44	Beverly Y. Sanders	2227995
	02/26/2021			03/04/2021 09:45	Beverly Y. Sanders	2228000
EPA 365.1 Rev. 2.0	02/26/2021	03/04/2021 12:20	Shengyu Ding	03/09/2021 10:57	Shengyu Ding	2227995
	02/26/2021	03/04/2021 12:20	Shengyu Ding	03/09/2021 11:05	Shengyu Ding	2227999
	02/26/2021	03/04/2021 12:20	Shengyu Ding	03/09/2021 11:06	Shengyu Ding	2228000
EPA 365.1 Rev. 2.0 dissolved	02/26/2021			02/26/2021 17:01	Samantha Davila	2227996, 2228002
	02/26/2021			02/26/2021 17:02	Samantha Davila	2228001
EPA 8321B	02/26/2021	03/01/2021 09:00	Hoor Shaik	03/03/2021 09:37	Juyoung Kim	2228009
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/01/2021 23:08	Rebecca Ware	2228008
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/01/2021 23:22	Rebecca Ware	2228009
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/04/2021 23:45	Rebecca Ware	2228008
	02/26/2021	03/01/2021 10:00	Rebecca Ware	03/04/2021 23:57	Rebecca Ware	2228009
	02/26/2021	03/02/2021 09:00	Hoor Shaik	03/03/2021 09:03	Juyoung Kim	2228008
SM 2120 B-2011	02/26/2021			02/26/2021 18:09	Benjamin T. Nordmann	2227997
	02/26/2021			02/26/2021 18:10	Benjamin T. Nordmann	2227998
	02/26/2021			02/26/2021 18:18	Benjamin T. Nordmann	2227994
SM 2320 B-2011	02/26/2021			03/04/2021 06:24	Dale L. Simmons	2227994
	02/26/2021			03/04/2021 07:06	Dale L. Simmons	2227997
	02/26/2021			03/04/2021 07:15	Dale L. Simmons	2227998
SM 2340B	02/26/2021			03/04/2021 15:21	Betina Topolski	2228010
	02/26/2021			03/04/2021 15:29	Betina Topolski	2228011
SM 2540 C-2011	02/26/2021			03/03/2021 13:35	Yijie Li	2227994, 2227997, 2227998
SM 2540 D-2011	02/26/2021			03/03/2021 13:35	Yijie Li	2227994, 2227997, 2227998
SM 4500 F-C-2011	02/26/2021			03/04/2021 06:24	Dale L. Simmons	2227994
	02/26/2021			03/04/2021 07:06	Dale L. Simmons	2227997

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	02/26/2021			03/04/2021 07:15	Dale L. Simmons	2227998
SM 5310 B-2011	02/26/2021			03/12/2021 01:11	Madeline Gruver	2227995
	02/26/2021			03/12/2021 01:22	Madeline Gruver	2227999
	02/26/2021			03/12/2021 01:56	Madeline Gruver	2228000