

Chemical Analysis Report

TLH-ROC-2021-03-04-03

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

Event Description: **Run 10**
Request ID: **RQ-2021-03-08-60**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-MAR-2021 10:16



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: Sandy Branch @ SR22

Collection Date/Time: 03/04/2021 10:35

Field ID: G3TLHR0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229265	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P394502	
	EPA 300.0 Rev. 2.1	Chloride	3.8		mg Cl/L	P394698	
		Sulfate	0.56		mg SO4/L	P394700	
	SM 2120 B-2011	Color (true)	110	A	PCU	P394498	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P394733	
	SM 2540 C-2011	TDS	37		mg/L	P394830	
	SM 2540 D-2011	TSS	2	I	mg/L	P394835	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394738	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P394632	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P394785	
2229266	EPA 353.2 Rev. 2.0	NO2NO3-N	0.043		mg N/L	P394620	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P394654	MS
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P395016	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P394494	
2229267	SM 2540 D-2011: dissolved						

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: Big Branch @ Rd5

Collection Date/Time: 03/04/2021 11:05

Field ID: G2TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229268	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P394502	
	EPA 300.0 Rev. 2.1	Chloride	3.8		mg Cl/L	P394698	
		Sulfate	0.42	I	mg SO4/L	P394700	
	SM 2120 B-2011	Color (true)	56		PCU	P394498	
	SM 2320 B-2011	Total Alkalinity	4.1		mg CaCO3/L	P394734	
	SM 2540 C-2011	TDS	23	I	mg/L	P394830	
	SM 2540 D-2011	TSS	2	I	mg/L	P394835	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394739	
2229269	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P394632	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P394785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P394620	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P394654	MS
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P395016	
2229270	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394494	
2229277	EPA 8321B	2,4-D	0.0020	U	ug/L	P394466	
		Acesulfame K	0.10	U	ug/L	P394526	MS
		2,4,5-T	0.0040	U	ug/L	P394466	
		AMPA	0.10	U	ug/L	P394526	
		Sucralose	0.010	U	ug/L	P394526	
		Acetaminophen	0.0080	U	ug/L	P394466	
		Acetamiprid	0.0020	U	ug/L	P394466	
		Endothall	0.25	U	ug/L	P394526	MS
		Glufosinate	0.10	U	ug/L	P394526	MS
		Glyphosate	0.10	U	ug/L	P394526	
		Afidopyropen	0.0020	U	ug/L	P394466	
		Bentazon	8.0E-04	U	ug/L	P394466	
		Benzovindiflupyr	0.0020	U	ug/L	P394466	
		Carbamazepine	8.0E-04	U	ug/L	P394466	
		Clothianidin	0.0020	U	ug/L	P394466	
		Dinotefuran	0.0020	U	ug/L	P394466	
		Diuron	0.0020	U	ug/L	P394466	
		Fenuron	0.016	U	ug/L	P394466	
		Fluridone	8.0E-04	U	ug/L	P394466	
		Imazapyr	0.19		ug/L	P394466	
		Hydrocodone	0.0020	U	ug/L	P394466	
		Ibuprofen	0.020	U	ug/L	P394466	
		Imidacloprid	0.0020	U	ug/L	P394466	
		Linuron	0.0040	U	ug/L	P394466	
		Mandestrobin	0.0020	U	ug/L	P394466	
		MCP	0.0020	U	ug/L	P394466	
		Naproxen	0.0080	U	ug/L	P394466	
		Primidone	0.0040	U	ug/L	P394466	
		Pyraclostrobin	0.0020	U	ug/L	P394466	

Field ID: G2TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229277	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P394466	
		Tolfenpyrad	0.0020	U	ug/L	P394466	
		Triclopyr	0.0040	U	ug/L	P394466	
2229280	EPA 200.7 Rev. 4.4	Barium	8.5		ug/L	P394489	
		Calcium	2.06		mg/L	P394489	
		Iron	240		ug/L	P394489	
		Magnesium	0.38		mg/L	P394489	
		Manganese	6.7		ug/L	P394489	
		Potassium	0.30	U	mg/L	P394489	
		Sodium	2.2		mg/L	P394489	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P394489	
		Aluminum	236		ug/L	P394489	
		Antimony	0.050	U	ug/L	P394489	
		Arsenic	0.095	I	ug/L	P394489	
		Beryllium	0.023	I	ug/L	P394489	
		Boron**	7.4	I	ug/L	P394489	
		Cadmium	0.020	U	ug/L	P394489	
		Chromium	0.40	U	ug/L	P394489	
		Copper	0.40	U	ug/L	P394489	
		Lead	0.29	I	ug/L	P394489	
		Nickel	0.50	U	ug/L	P394489	
		Selenium	0.20	U	ug/L	P394489	
		Silver	0.010	U	ug/L	P394489	
		Thallium	0.10	U	ug/L	P394489	
	SM 2340B	Hardness	6.7		mg/L	P394489	

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: FB_03042021

Collection Date/Time: 03/04/2021 11:15

Field ID: FB_03042021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229278	EPA 8321B	2,4-D	0.0020	U	ug/L	P394466	
		Acesulfame K	0.10	U	ug/L	P394526	MS
		2,4,5-T	0.0040	U	ug/L	P394466	
		AMPA	0.10	U	ug/L	P394526	
		Sucralose	0.010	U	ug/L	P394526	
		Acetaminophen	0.0080	U	ug/L	P394466	
		Acetamiprid	0.0020	U	ug/L	P394466	
		Endothall	0.25	U	ug/L	P394526	MS
		Glufosinate	0.10	U	ug/L	P394526	MS
		Glyphosate	0.10	U	ug/L	P394526	
		Afidopyropen	0.0020	U	ug/L	P394466	
		Bentazon	8.0E-04	U	ug/L	P394466	
		Benzovindiflupyr	0.0020	U	ug/L	P394466	
		Carbamazepine	8.0E-04	U	ug/L	P394466	
		Clothianidin	0.0020	U	ug/L	P394466	
		Dinotefuran	0.0020	U	ug/L	P394466	
		Diuron	0.0020	U	ug/L	P394466	
		Fenuron	0.016	U	ug/L	P394466	
		Fluridone	8.0E-04	U	ug/L	P394466	
		Imazapyr	0.0040	U	ug/L	P394466	
		Hydrocodone	0.0020	U	ug/L	P394466	
		Ibuprofen	0.020	U	ug/L	P394466	
		Imidacloprid	0.0020	U	ug/L	P394466	
		Linuron	0.0040	U	ug/L	P394466	
		Mandestrobin	0.0020	U	ug/L	P394466	
		MCPP	0.0020	U	ug/L	P394466	
		Naproxen	0.0080	U	ug/L	P394466	
		Primidone	0.0040	U	ug/L	P394466	
		Pyraclostrobin	0.0020	U	ug/L	P394466	
		Thiamethoxam	0.0020	U	ug/L	P394466	
		Tolfenpyrad	0.0020	U	ug/L	P394466	
		Triclopyr	0.0040	U	ug/L	P394466	

Sample Location: Stone Mill Creek Upstream S Dianna St

Collection Date/Time: 03/04/2021 11:35

Field ID: G2TLHR0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2229262	EPA 180.1 Rev. 2.0	Turbidity	7.9	A	NTU	P394502	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P394698	
		Sulfate	1.0		mg SO4/L	P394700	
		Color (true)	180		PCU	P394498	
	SM 2320 B-2011	Total Alkalinity	1.9	I	mg CaCO3/L	P394733	
	SM 2540 C-2011	TDS	35		mg/L	P394830	
	SM 2540 D-2011	TSS	2	I	mg/L	P394835	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394738	
2229263	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P394632	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P394721	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P394620	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P394654	MS
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P395016	
2229264	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394494	
2229279	EPA 200.7 Rev. 4.4	Barium	8.9		ug/L	P394489	
		Calcium	2.03		mg/L	P394489	
		Iron	660		ug/L	P394489	
		Magnesium	0.54		mg/L	P394489	
		Manganese	11.0		ug/L	P394489	
		Potassium	0.30	U	mg/L	P394489	
		Sodium	2.4		mg/L	P394489	
	EPA 200.8 Rev. 5.4	Zinc	5.2	I	ug/L	P394489	
		Aluminum	583		ug/L	P394489	
		Antimony	0.050	U	ug/L	P394489	
		Arsenic	0.22		ug/L	P394489	
		Beryllium	0.030	I	ug/L	P394489	
		Boron**	9.2		ug/L	P394489	
		Cadmium	0.020	U	ug/L	P394489	
		Chromium	0.60	I	ug/L	P394489	
		Copper	0.95		ug/L	P394489	
		Lead	0.55		ug/L	P394489	
		Nickel	0.50	U	ug/L	P394489	
		Selenium	0.20	U	ug/L	P394489	
		Silver	0.010	U	ug/L	P394489	
		Thallium	0.10	U	ug/L	P394489	
		Hardness	7.3		mg/L	P394489	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 03/16/2021.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394502

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394489

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: P394489

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: P394698

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394700

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394632

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: P394721

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394785

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394620

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394654

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394494

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

Reference Method: EPA 8321B
Batch ID: P394466

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394466

Component	Result	Code	Units
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: P394526

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: P394498

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P394733

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

Reference Method: SM 2320 B-2011

Batch ID: P394734

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

Reference Method: SM 2540 C-2011

Batch ID: P394830

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P394835

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P394738

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P394739

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395016

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: P394489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	106		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	101		P	85 - 115
Potassium	100		P	85 - 115
Sodium	104		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	94.9		P	85 - 115
Boron	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	109		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	101		P	85 - 115
Silver	110		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394698

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394700

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394632

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394721

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394785

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394620

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: P394654

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394494

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

Reference Method: EPA 8321B

Batch ID: P394466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	91.0		P	30 - 160
2,4,5-T	78.0		P	30 - 160
Acetaminophen	99.7		P	30 - 160
Acetamiprid	72.9		P	30 - 160
Afidopyropen	52.2		P	30 - 160
Bentazon	81.9		P	30 - 160
Benzovindiflupyr	71.7		P	30 - 160
Carbamazepine	83.8		P	30 - 160
Clothianidin	87.9		P	30 - 160
Dinotefuran	83.9		P	30 - 160
Diuron	64.3		P	30 - 160
Fenuron	96.6		P	30 - 160
Fluridone	74.6		P	30 - 160
Hydrocodone	90.2		P	30 - 160
Ibuprofen	77.4		P	30 - 160
Imazapyr	99.7		P	30 - 160
Imidacloprid	94.0		P	30 - 160
Linuron	73.8		P	30 - 160
Mandestrobin	79.7		P	30 - 160
MCPP	87.8		P	30 - 160
Naproxen	53.5		P	30 - 160
Primidone	90.3		P	30 - 160
Pyraclostrobin	68.9		P	30 - 160
Thiamethoxam	88.9		P	30 - 160
Tolfenpyrad	47.9		P	30 - 160
Triclopyr	79.7		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P394526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	142		P	40 - 150
AMPA	95.1		P	40 - 150
Endothall	86.4		P	40 - 150
Glufosinate	101		P	40 - 150
Glyphosate	97.3		P	40 - 140
Sucralose	96.9		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P394498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P394733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	93 - 104

Reference Method: SM 2320 B-2011

Batch ID: P394734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P394738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	90 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P394739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228876	Barium	107	105	P/P	80 - 120
2228876	Calcium	107		P	80 - 120
2228876	Iron	107	106	P/P	80 - 120
2228876	Magnesium	103		P	80 - 120
2228876	Manganese	104	103	P/P	80 - 120
2228876	Potassium	104	103	P/P	80 - 120
2228876	Sodium	105		P	80 - 120
2228876	Zinc	106	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228876	Aluminum	100	103	P/P	80 - 120
2228876	Antimony	103	105	P/P	80 - 120
2228876	Arsenic	102	103	P/P	80 - 120
2228876	Beryllium	93.7	96.4	P/P	80 - 120
2228876	Boron	104	109	P/P	80 - 120
2228876	Cadmium	103	107	P/P	80 - 120
2228876	Chromium	101	104	P/P	80 - 120
2228876	Copper	99.2	101	P/P	80 - 120
2228876	Lead	110	112	P/P	80 - 120
2228876	Nickel	99.0	101	P/P	80 - 120
2228876	Selenium	99.1	100	P/P	80 - 120
2228876	Silver	110	110	P/P	80 - 120
2228876	Thallium	107	111	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228774	Chloride	99.7		P	90 - 110
2228990	Chloride	92.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228774	Sulfate	96.3		P	90 - 110
2228990	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229269	Ammonia-N	97.0	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229269	Kjeldahl Nitrogen	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229263	NO2NO3-N	96.2	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229252	Total-P	114	110	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229270	O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P394466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228915	2,4-D	94.4	90.3	P/P	30 - 160
2228915	2,4,5-T	79.7	72.8	P/P	30 - 160
2228915	Acetaminophen	113	114	P/P	30 - 160
2228915	Acetamiprid	97.8	92.0	P/P	30 - 160
2228915	Afidopyropen	73.2	67.6	P/P	30 - 160
2228915	Bentazon	76.9	70.9	P/P	30 - 160
2228915	Benzovindiflupyr	76.2	74.3	P/P	30 - 160
2228915	Carbamazepine	92.4	85.8	P/P	30 - 160
2228915	Clothianidin	94.2	97.4	P/P	30 - 160
2228915	Dinotefuran	90.5	89.9	P/P	30 - 160
2228915	Diuron	68.7	62.3	P/P	30 - 160
2228915	Fenuron	95.8	83.2	P/P	30 - 160
2228915	Fluridone	95.3	96.4	P/P	30 - 160
2228915	Hydrocodone	107	97.1	P/P	30 - 160
2228915	Ibuprofen	70.4	76.4	P/P	30 - 160
2228915	Imazapyr	88.0	93.9	P/P	30 - 160
2228915	Imidacloprid	110	95.6	P/P	30 - 160
2228915	Linuron	76.7	73.7	P/P	30 - 160
2228915	Mandestrobin	82.5	77.0	P/P	30 - 160
2228915	MCPP	83.0	88.7	P/P	30 - 160
2228915	Naproxen	49.7	40.6	P/P	30 - 160
2228915	Primidone	97.8	98.9	P/P	30 - 160
2228915	Pyraclostrobin	73.3	69.5	P/P	30 - 160
2228915	Thiamethoxam	105	98.5	P/P	30 - 160
2228915	Tolfenpyrad	46.8	45.8	P/P	30 - 160
2228915	Triclopyr	77.8	69.6	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P394526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228966	Acesulfame K	207	213	F/F	40 - 150
2228966	AMPA	109	110	P/P	40 - 150
2228966	Endothall	149	198	P/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P394526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228966	Glufosinate	133	151	P/F	40 - 150
2228966	Glyphosate	71.8	83.2	P/P	40 - 140
2228966	Sucralose	114	115	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P394738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229519	Fluoride	98.5	96.8	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P394739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229495	Fluoride	99.8	99.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P395016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228991	Organic Carbon	96.0	94.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P394502

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229262	Turbidity	1.65	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394489

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228876	Barium	1.83	Spike	P	0 - 20
2228876	Calcium	0.181	Spike	P	0 - 20
2228876	Iron	0.369	Spike	P	0 - 20
2228876	Magnesium	0.0912	Spike	P	0 - 20
2228876	Manganese	0.432	Spike	P	0 - 20
2228876	Potassium	0.463	Spike	P	0 - 20
2228876	Sodium	0.349	Spike	P	0 - 20
2228876	Zinc	2.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394489

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228876	Aluminum	2.07	Spike	P	0 - 20
2228876	Antimony	1.66	Spike	P	0 - 20
2228876	Arsenic	0.590	Spike	P	0 - 20
2228876	Beryllium	2.72	Spike	P	0 - 20
2228876	Boron	4.30	Spike	P	0 - 20
2228876	Cadmium	3.31	Spike	P	0 - 20
2228876	Chromium	2.31	Spike	P	0 - 20
2228876	Copper	1.54	Spike	P	0 - 20
2228876	Lead	2.07	Spike	P	0 - 20
2228876	Nickel	1.73	Spike	P	0 - 20
2228876	Selenium	1.30	Spike	P	0 - 20
2228876	Silver	0.638	Spike	P	0 - 20
2228876	Thallium	3.43	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394698

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228774	Chloride	0.911	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394700

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228774	Sulfate	0.456	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229269	Ammonia-N	0.749	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228954	Kjeldahl Nitrogen	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229269	Kjeldahl Nitrogen	1.95	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229263	NO2NO3-N	0.380	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229252	Total-P	3.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229270	O-Phosphate-P	1.48	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P394466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228915	2,4-D	4.43	Spike	P	0 - 30
2228915	2,4,5-T	9.11	Spike	P	0 - 30
2228915	Acetaminophen	0.697	Spike	P	0 - 30
2228915	Acetamiprid	6.03	Spike	P	0 - 30
2228915	Afidopyropen	7.91	Spike	P	0 - 30
2228915	Bentazon	6.46	Spike	P	0 - 30
2228915	Benzovindiflupyr	2.49	Spike	P	0 - 30
2228915	Carbamazepine	7.40	Spike	P	0 - 30
2228915	Clothianidin	3.42	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P394466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228915	Dinotefuran	0.607	Spike	P	0 - 30
2228915	Diuron	9.76	Spike	P	0 - 30
2228915	Fenuron	14.1	Spike	P	0 - 30
2228915	Fluridone	1.16	Spike	P	0 - 30
2228915	Hydrocodone	10.2	Spike	P	0 - 30
2228915	Ibuprofen	8.10	Spike	P	0 - 30
2228915	Imazapyr	6.48	Spike	P	0 - 30
2228915	Imidacloprid	13.1	Spike	P	0 - 30
2228915	Linuron	3.97	Spike	P	0 - 30
2228915	Mandestrobin	6.92	Spike	P	0 - 30
2228915	MCPPP	6.63	Spike	P	0 - 30
2228915	Naproxen	15.7	Spike	P	0 - 30
2228915	Primidone	1.09	Spike	P	0 - 30
2228915	Pyraclostrobin	5.42	Spike	P	0 - 30
2228915	Thiamethoxam	6.36	Spike	P	0 - 30
2228915	Tolfenpyrad	2.14	Spike	P	0 - 30
2228915	Triclopyr	11.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228966	Acesulfame K	2.84	Spike	P	0 - 30
2228966	AMPA	0.907	Spike	P	0 - 30
2228966	Endothall	28.4	Spike	P	0 - 30
2228966	Glufosinate	12.8	Spike	P	0 - 30
2228966	Glyphosate	14.8	Spike	P	0 - 30
2228966	Sucralose	1.07	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P394498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229265	Color (true)	1.81	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229519	Total Alkalinity	0.827	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P394734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229495	Total Alkalinity	1.47	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P394830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229453	TDS	3.91	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P394738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229519	Fluoride	0.946	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P394739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229495	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228991	Organic Carbon	1.02	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2229277

Field Sample ID: G2TLHR0049

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	81.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.9	P	30 - 160
EPA 8321B	Diuron-d6	60.4	P	30 - 160
EPA 8321B	Endothall-d6	127	P	40 - 160
EPA 8321B	Endothall-d6	127	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	40 - 160
EPA 8321B	Ibuprofen-d3	74.7	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Lab Sample ID: 2229278

Field Sample ID: FB_03042021

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.5	P	30 - 160
EPA 8321B	Diuron-d6	60.1	P	30 - 160
EPA 8321B	Endothall-d6	106	P	40 - 160
EPA 8321B	Endothall-d6	106	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	76.3	P	30 - 160
EPA 8321B	Primidone-d5	98.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103892

Included Lab Sample IDs: 2229264, 2229267, 2229270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	96.1	P/P	90 - 110
O-Phosphate-P	99.3	99.0	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103893

Included Lab Sample IDs: 2229262, 2229265, 2229268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103894

Included Lab Sample IDs: 2229262, 2229265, 2229268

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103926

Included Lab Sample IDs: 2229279, 2229280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	106	104	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Magnesium	101	103	P/P	90 - 110
Manganese	101	100	P/P	90 - 110
Potassium	98.4	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	105	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103927

Included Lab Sample IDs: 2229277, 2229278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	64.7	66.6	P/P	50 - 150
2,4,5-T	67.2	78.0	P/P	50 - 150
Acetaminophen	109	95.9	P/P	60 - 160
Acetamiprid	99.6	98.2	P/P	50 - 150
Afidopyropen	79.6	77.1	P/P	50 - 150
Bentazon	110	105	P/P	50 - 160
Benzovindiflupyr	88.4	87.3	P/P	50 - 160
Carbamazepine	91.1	84.0	P/P	60 - 150
Clothianidin	96.2	90.6	P/P	60 - 150
Dinotefuran	95.7	92.3	P/P	50 - 150
Diuron	89.6	96.6	P/P	60 - 160
Fenuron	103	97.8	P/P	60 - 150
Fluridone	120	104	P/P	60 - 160
Hydrocodone	99.7	108	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A103927

Included Lab Sample IDs: 2229277, 2229278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	79.5	72.4	P/P	50 - 160
Imazapyr	94.8	78.9	P/P	50 - 160
Imidacloprid	93.6	92.5	P/P	60 - 150
Linuron	101	96.7	P/P	60 - 150
Mandestrobin	94.4	94.8	P/P	50 - 150
MCPP	77.5	75.2	P/P	50 - 150
Naproxen	123	132	P/P	50 - 160
Primidone	91.9	94.8	P/P	60 - 150
Pyraclostrobin	87.5	91.6	P/P	60 - 150
Thiamethoxam	93.0	96.4	P/P	50 - 150
Tolfenpyrad	87.4	87.6	P/P	60 - 150
Triclopyr	78.4	77.2	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103943

Included Lab Sample IDs: 2229263, 2229266, 2229269

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

Reference Method: EPA 8321B

Run ID: A103949

Included Lab Sample IDs: 2229277, 2229278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.6	85.1	P/P	60 - 160
AMPA	112	106	P/P	60 - 160
Endothall	120	125	P/P	60 - 160
Glufosinate	103	107	P/P	60 - 160
Glyphosate	123	156	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103952

Included Lab Sample IDs: 2229263, 2229266, 2229269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	98.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103974

Included Lab Sample IDs: 2229262, 2229265, 2229268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	99.4	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103985

Included Lab Sample IDs: 2229263, 2229266, 2229269

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103985

Included Lab Sample IDs: 2229263, 2229266, 2229269

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

Reference Method: SM 2320 B-2011

Run ID: A103989

Included Lab Sample IDs: 2229262, 2229265, 2229268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103989

Included Lab Sample IDs: 2229262, 2229265, 2229268

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104011

Included Lab Sample IDs: 2229263

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104061

Included Lab Sample IDs: 2229266, 2229269

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

Reference Method: EPA 8321B

Run ID: A104071

Included Lab Sample IDs: 2229277, 2229278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.2	95.6	P/P	60 - 160
Sucralose	96.1	100	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104075

Included Lab Sample IDs: 2229279, 2229280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	97.3	97.7	P/P	90 - 110
Arsenic	99.0	100	P/P	90 - 110
Beryllium	97.6	98.9	P/P	90 - 110
Boron	108	101	P/P	90 - 110
Cadmium	99.8	99.8	P/P	90 - 110
Chromium	99.7	99.5	P/P	90 - 110
Copper	98.1	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104075

Included Lab Sample IDs: 2229279, 2229280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	99.3	99.4	P/P	90 - 110
Selenium	99.3	99.8	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	104	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104080

Included Lab Sample IDs: 2229263, 2229266, 2229269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	94.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104099

Included Lab Sample IDs: 2229279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	97.3	96.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104184

Included Lab Sample IDs: 2229280

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	98.9	98.7	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						1.65	
EPA 200.7 Rev. 4.4	Barium	102		107	105			1.83
	Calcium	106		107				0.181
	Iron	102		107	106			0.369
	Magnesium	101		103				0.0912
	Manganese	101		104	103			0.432
	Potassium	100		104	103			0.463
	Sodium	104		105				0.349
	Zinc	101		106	103			2.15
EPA 200.8 Rev. 5.4	Aluminum	102		100	103			2.07
	Antimony	103		103	105			1.66
	Arsenic	102		102	103			0.590
	Beryllium	94.9		93.7	96.4			2.72
	Boron	105		104	109			4.30
	Cadmium	101		103	107			3.31
	Chromium	100		101	104			2.31
	Copper	100		99.2	101			1.54
	Lead	109		110	112			2.07
	Nickel	99.2		99.0	101			1.73
	Selenium	101		99.1	100			1.30
	Silver	110		110	110			0.638
	Thallium	104		107	111			3.43
EPA 300.0 Rev. 2.1	Chloride	101		99.7	92.4		0.911	
	Sulfate	98.8		96.3	98.6		0.456	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6		97.0	97.8			0.749
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104						2.21
	Kjeldahl Nitrogen	103		106	104			1.95
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		96.2	96.7			0.380
EPA 365.1 Rev. 2.0	Total-P	106		114	110			3.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100		102	101			1.48
EPA 8321B	2,4-D	91.0		94.4	90.3			4.43
	2,4,5-T	78.0		79.7	72.8			9.11
	Acesulfame K	142		207	213			2.84
	Acetaminophen	99.7		113	114			0.697
	Acetamiprid	72.9		97.8	92.0			6.03
	Afidopyropen	52.2		73.2	67.6			7.91
	AMPA	95.1		109	110			0.907
	Bentazon	81.9		76.9	70.9			6.46
	Benzovindiflupyr	71.7		76.2	74.3			2.49
	Carbamazepine	83.8		92.4	85.8			7.40
	Clothianidin	87.9		94.2	97.4			3.42
	Dinotefuran	83.9		90.5	89.9			0.607
	Diuron	64.3		68.7	62.3			9.76
	Endothall	86.4		149	198			28.4
	Fenuron	96.6		95.8	83.2			14.1
	Fluridone	74.6		95.3	96.4			1.16
	Glufosinate	101		133	151			12.8
	Glyphosate	97.3		71.8	83.2			14.8
	Hydrocodone	90.2		107	97.1			10.2
	Ibuprofen	77.4		70.4	76.4			8.10
	Imazapyr	99.7		88.0	93.9			6.48
	Imidacloprid	94.0		110	95.6			13.1
	Linuron	73.8		76.7	73.7			3.97
	Mandestrobin	79.7		82.5	77.0			6.92

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	MCPP	87.8	83.0	88.7		6.63
	Naproxen	53.5	49.7	40.6		15.7
	Primidone	90.3	97.8	98.9		1.09
	Pyraclostrobin	68.9	73.3	69.5		5.42
	Sucralose	96.9	114	115		1.07
	Thiamethoxam	88.9	105	98.5		6.36
	Tolfenpyrad	47.9	46.8	45.8		2.14
	Triclopyr	79.7	77.8	69.6		11.2
SM 2120 B-2011	Color (true)	101			1.81	
SM 2320 B-2011	Total Alkalinity	99.3			0.827	
	Total Alkalinity	98.4			1.47	
SM 2540 C-2011	TDS				3.91	
SM 4500 F-C-2011	Fluoride	99.6	98.5	96.8		0.946
	Fluoride	98.2	99.8	99.8		0.0
SM 5310 B-2011	Organic Carbon	94.3	96.0	94.6		1.02

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2229262, 2229265, 2229268
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2229279, 2229280
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2229279, 2229280
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2229262, 2229265, 2229268
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2229262, 2229265, 2229268
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2229263, 2229266, 2229269
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2229263, 2229266, 2229269
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2229263, 2229266, 2229269
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2229263, 2229266, 2229269
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2229264, 2229267, 2229270
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2229277, 2229278
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2229277, 2229278
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2229262, 2229265, 2229268
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2229262, 2229265, 2229268
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2229279, 2229280
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2229262, 2229265, 2229268
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2229262, 2229265, 2229268
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2229262, 2229265, 2229268
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2229263, 2229266, 2229269

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	03/04/2021			03/04/2021 16:10	Yen Ta	2229262, 2229265, 2229268
EPA 200.7 Rev. 4.4	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/05/2021 16:11	Betina Topolski	2229279
	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/05/2021 16:17	Betina Topolski	2229280
EPA 200.8 Rev. 5.4	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/15/2021 19:35	McKinley C Carter	2229279
	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/15/2021 19:43	McKinley C Carter	2229280
	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/16/2021 17:44	Josef B Mick	2229279
	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/19/2021 10:51	Alexander Thompson	2229280
EPA 300.0 Rev. 2.1	03/04/2021			03/08/2021 23:25	Lipi Saha	2229262
	03/04/2021			03/08/2021 23:37	Lipi Saha	2229265
	03/04/2021			03/08/2021 23:49	Lipi Saha	2229268
EPA 350.1 Rev. 2.0	03/04/2021			03/08/2021 16:59	Ping Hua	2229269
	03/04/2021			03/08/2021 17:03	Ping Hua	2229263
	03/04/2021			03/08/2021 17:08	Ping Hua	2229266
EPA 351.2 Rev. 2.0	03/04/2021	03/10/2021 12:23	Benjamin T. Nordmann	03/11/2021 13:50	Virginia P. Brown	2229263
	03/04/2021	03/11/2021 12:20	Benjamin T. Nordmann	03/15/2021 10:19	Virginia P. Brown	2229266
	03/04/2021	03/11/2021 12:20	Benjamin T. Nordmann	03/15/2021 10:21	Virginia P. Brown	2229269
EPA 353.2 Rev. 2.0	03/04/2021			03/08/2021 11:15	Beverly Y. Sanders	2229263
	03/04/2021			03/08/2021 11:30	Beverly Y. Sanders	2229266
	03/04/2021			03/08/2021 11:31	Beverly Y. Sanders	2229269
EPA 365.1 Rev. 2.0	03/04/2021	03/09/2021 11:56	Yen Ta	03/10/2021 12:34	Shengyu Ding	2229263
	03/04/2021	03/09/2021 11:56	Yen Ta	03/10/2021 12:35	Shengyu Ding	2229266
	03/04/2021	03/09/2021 11:56	Yen Ta	03/10/2021 12:36	Shengyu Ding	2229269
EPA 365.1 Rev. 2.0 dissolved	03/04/2021			03/04/2021 15:35	Blanca Fach	2229270
	03/04/2021			03/04/2021 15:41	Blanca Fach	2229264
	03/04/2021			03/04/2021 15:42	Blanca Fach	2229267
EPA 8321B	03/04/2021	03/05/2021 11:30	Rebecca Ware	03/05/2021 20:59	Rebecca Ware	2229277
	03/04/2021	03/05/2021 11:30	Rebecca Ware	03/05/2021 21:13	Rebecca Ware	2229278
	03/04/2021	03/05/2021 11:30	Rebecca Ware	03/12/2021 13:17	Rebecca Ware	2229278
	03/04/2021	03/05/2021 11:30	Rebecca Ware	03/12/2021 17:21	Rebecca Ware	2229277
	03/04/2021	03/05/2021 13:00	Hoor Shaik	03/08/2021 12:24	Juyoung Kim	2229277
	03/04/2021	03/05/2021 13:00	Hoor Shaik	03/08/2021 12:59	Juyoung Kim	2229278
SM 2120 B-2011	03/04/2021			03/04/2021 16:13	Benjamin T. Nordmann	2229265, 2229268
	03/04/2021			03/04/2021 16:22	Benjamin T. Nordmann	2229262
SM 2320 B-2011	03/04/2021			03/10/2021 00:26	Dale L. Simmons	2229262
	03/04/2021			03/10/2021 00:34	Dale L. Simmons	2229265
	03/04/2021			03/10/2021 02:02	Dale L. Simmons	2229268
SM 2340B	03/04/2021			03/05/2021 16:11	Betina Topolski	2229279
	03/04/2021			03/05/2021 16:17	Betina Topolski	2229280
SM 2540 C-2011	03/04/2021			03/08/2021 14:25	Yijie Li	2229262, 2229265, 2229268
SM 2540 D-2011	03/04/2021			03/08/2021 14:25	Yijie Li	2229262, 2229265, 2229268

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	03/04/2021			03/10/2021 00:26	Dale L. Simmons	2229262
	03/04/2021			03/10/2021 00:34	Dale L. Simmons	2229265
	03/04/2021			03/10/2021 02:02	Dale L. Simmons	2229268
SM 5310 B-2011	03/04/2021			03/16/2021 02:45	Madeline Gruver	2229263
	03/04/2021			03/16/2021 02:57	Madeline Gruver	2229266
	03/04/2021			03/16/2021 03:07	Madeline Gruver	2229269