

Chemical Analysis Report

TLH-ROC-2022-08-29-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 16**
Request ID: **RQ-2022-07-25-17**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 20-SEP-2022 13:14



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: Double Branch Upstream SR270

Collection Date/Time: 08/29/2022 09:15

Field ID: G1TLHR0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2352891	EPA 8321B	2,4-D	0.0020	U	ug/L	P418839	
		Acesulfame K	0.10	U	ug/L	P418802	
		2,4,5-T	0.0040	U	ug/L	P418839	
		AMPA	0.10	U	ug/L	P418802	
		Acetaminophen	0.0080	U	ug/L	P418839	
		Acetamiprid	0.0020	U	ug/L	P418839	
		Endothall	0.25	U	ug/L	P418802	
		Glufosinate	0.10	U	ug/L	P418802	
		Glyphosate	0.10	U	ug/L	P418802	
		Afidopyropen	0.0020	U	ug/L	P418839	
		Bentazon	8.0E-04	U	ug/L	P418839	
		Sucralose	0.084		ug/L	P418802	
		Benzovindiflupyr	0.0020	U	ug/L	P418839	
		Carbamazepine	8.0E-04	U	ug/L	P418839	
		Clothianidin	0.0020	U	ug/L	P418839	
		Dinotefuran	0.0020	U	ug/L	P418839	
		Diuron	0.0020	U	ug/L	P418839	
		Fenuron	0.032	U	ug/L	P418839	
		Fluridone	8.0E-04	U	ug/L	P418839	
		Imazapyr	0.0040	U	ug/L	P418839	
		Hydrocodone	0.0020	U	ug/L	P418839	
		Ibuprofen	0.080	U	ug/L	P418839	
		Imidacloprid	0.0020	U	ug/L	P418839	
		Linuron	0.0040	U	ug/L	P418839	
		Mandestrobin	0.0020	U	ug/L	P418839	
		MCPP	0.0040	U	ug/L	P418839	
		Naproxen	0.0080	U	ug/L	P418839	
		Primidone	0.0040	U	ug/L	P418839	MS
		Pyraclostrobin	0.0020	U	ug/L	P418839	
		Silvex	0.0040	U	ug/L	P418839	
		Thiamethoxam	0.0020	U	ug/L	P418839	
		Tolfenpyrad	0.0020	U	ug/L	P418839	
		Triclopyr	0.0040	U	ug/L	P418839	

Sample Location: Gilberts Mill Creek @ Woodrest Rd

Collection Date/Time: 08/29/2022 11:10

Field ID: G3TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2352879	DEP SOP: NU-094-1	Color (true)	110	A	PCU	P418892	
	EPA 180.1 Rev. 2.0	Turbidity	32		NTU	P418879	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P419468	
		Sulfate	0.66		mg SO4/L	P419471	
	SM 2320 B-2011	Total Alkalinity	8.7		mg CaCO3/L	P419278	
	SM 2540 C-2011	TDS	64		mg/L	P419427	
	SM 2540 D-2011	TSS	10		mg/L	P419317	
2352880	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P419281	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P419068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P418961	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P419057	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P418986	
2352894	SM 5310 B-2011	Organic Carbon	14		mg C/L	P419185	
	EPA 200.7 Rev. 4.4	Calcium	3.72		mg/L	P418968	
		Iron	2.78E+03		ug/L	P418968	
		Magnesium	1.47		mg/L	P418968	
		Potassium	2.4		mg/L	P418968	
		Sodium	1.4	I	mg/L	P418968	
		Strontium	10.1		ug/L	P418968	
		Tin	3.0	U	ug/L	P418968	
		Titanium	2.6	I	ug/L	P418968	
		Vanadium	2.9	I	ug/L	P418968	
		Zinc	5.0	U	ug/L	P418968	
	EPA 200.8 Rev. 5.4	Aluminum	262		ug/L	P418968	
		Antimony	0.061	I	ug/L	P418968	
		Arsenic	1.40		ug/L	P418968	
		Barium	15.0		ug/L	P418968	
		Beryllium	0.014	I	ug/L	P418968	
		Boron	19.3		ug/L	P418968	
		Cadmium	0.020	U	ug/L	P418968	
		Chromium	0.42	I	ug/L	P418968	
		Cobalt	0.285		ug/L	P418968	
		Copper	0.82		ug/L	P418968	
		Lead	1.77		ug/L	P418968	
		Manganese	188		ug/L	P418968	
		Molybdenum	0.15	U	ug/L	P418968	
		Nickel	0.50	U	ug/L	P418968	
		Selenium	0.20	U	ug/L	P418968	
		Silver	0.010	U	ug/L	P418968	
		Thallium	0.10	U	ug/L	P418968	
	SM 2340 B-2011	Hardness	15.4		mg/L	P418968	

Field ID: G3TLHR0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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 09/15/2022.

Sample Location: FB

Collection Date/Time: 08/29/2022 11:20

Field ID: FB_08292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2352883	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P418891	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P418879	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P419468	
		Sulfate	0.20	U	mg SO4/L	P419471	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P419278	
	SM 2540 C-2011	TDS	15	U	mg/L	P419430	
	SM 2540 D-2011	TSS	2	U	mg/L	P419320	
2352884	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P419281	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P419068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P418961	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P419057	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P418986	
2352896	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P419185	
	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P418968	
		Iron	30	U	ug/L	P418968	
		Magnesium	0.040	U	mg/L	P418968	
		Potassium	0.30	U	mg/L	P418968	
		Sodium	0.50	U	mg/L	P418968	
		Strontium	2.0	U	ug/L	P418968	
		Tin	3.0	U	ug/L	P418968	
		Titanium	0.75	U	ug/L	P418968	
		Vanadium	2.0	U	ug/L	P418968	
		Zinc	5.0	U	ug/L	P418968	
		Aluminum	5.0	U	ug/L	P418968	
		Antimony	0.050	U	ug/L	P418968	
		Arsenic	0.050	U	ug/L	P418968	
		Barium	0.20	U	ug/L	P418968	
		Beryllium	0.010	U	ug/L	P418968	
		Boron	2.0	U	ug/L	P418968	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P418968	
		Chromium	0.40	U	ug/L	P418968	
		Cobalt	0.020	U	ug/L	P418968	
		Copper	0.40	U	ug/L	P418968	
		Lead	0.20	U	ug/L	P418968	
		Manganese	0.10	U	ug/L	P418968	
		Molybdenum	0.15	U	ug/L	P418968	
		Nickel	0.50	U	ug/L	P418968	
		Selenium	0.20	U	ug/L	P418968	
		Silver	0.010	U	ug/L	P418968	
		Thallium	0.10	U	ug/L	P418968	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P418968	

Field ID: FB_08292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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 353.2 Rev. 2.0: The result was confirmed on 09/02/2022.

Sample Location: Gilberts Mill Creek @ Aycock Rd

Collection Date/Time: 08/29/2022 10:50

Field ID: G3TLHR0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2352893	EPA 200.7 Rev. 4.4	Calcium	3.44		mg/L	P418968	
		Iron	2.31E+03		ug/L	P418968	
		Magnesium	1.21		mg/L	P418968	
		Potassium	1.2		mg/L	P418968	
		Sodium	1.5	I	mg/L	P418968	
		Strontium	11.7		ug/L	P418968	
		Tin	3.0	U	ug/L	P418968	
		Titanium	0.76	I	ug/L	P418968	
		Vanadium	2.0	U	ug/L	P418968	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P418968	
		Aluminum	166		ug/L	P418968	
		Antimony	0.050	U	ug/L	P418968	
		Arsenic	1.24		ug/L	P418968	
		Barium	15.6		ug/L	P418968	
		Beryllium	0.010	I	ug/L	P418968	
		Boron	18.5		ug/L	P418968	
		Cadmium	0.020	U	ug/L	P418968	
		Chromium	0.40	U	ug/L	P418968	
		Cobalt	0.490		ug/L	P418968	
		Copper	0.61	I	ug/L	P418968	
		Lead	0.92		ug/L	P418968	
		Manganese	415		ug/L	P418968	
		Molybdenum	0.15	U	ug/L	P418968	
		Nickel	0.50	U	ug/L	P418968	
		Selenium	0.20	U	ug/L	P418968	
		Silver	0.010	U	ug/L	P418968	
		Thallium	0.10	U	ug/L	P418968	
	SM 2340 B-2011	Hardness	13.6		mg/L	P418968	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/15/2022.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P418891

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P418892

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418879

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418968

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418968

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419468

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419471

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418961

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419057

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418986

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

Reference Method: EPA 8321B
Batch ID: P418802

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

Reference Method: EPA 8321B
Batch ID: P418839

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P418839

Component	Result	Code	Units
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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P419278

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

Reference Method: SM 2540 C-2011

Batch ID: P419427

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P419430

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P419317

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P419320

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P419281

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419185

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P418891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P418892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418879

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.7		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	113		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	108		P	85 - 115
Sodium	106		P	85 - 115
Strontium	106		P	85 - 115
Tin	111		P	85 - 115
Titanium	110		P	85 - 115
Vanadium	108		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	99.1		P	85 - 115
Barium	102		P	85 - 115
Beryllium	97.9		P	85 - 115
Boron	103		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	98.0		P	85 - 115
Cobalt	96.5		P	85 - 115
Copper	103		P	85 - 115
Lead	99.1		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	104		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	92.0		P	85 - 115
Silver	96.1		P	85 - 115
Thallium	99.0		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419468

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419057

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418986

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

Reference Method: EPA 8321B
Batch ID: P418802

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	104		P	40 - 150
Endothall	97.1		P	40 - 150
Glufosinate	103		P	40 - 150
Glyphosate	99.6		P	40 - 150
Sucralose	97.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P418839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	72.6		P	40 - 150
2,4,5-T	67.1		P	40 - 150
Acetaminophen	108		P	30 - 150
Acetamiprid	72.1		P	40 - 150
Afidopyropen	62.7		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P418839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	82.1		P	30 - 150
Benzovindiflupyr	70.1		P	40 - 150
Carbamazepine	81.4		P	40 - 150
Clothianidin	77.8		P	40 - 150
Dinotefuran	73.6		P	40 - 150
Diuron	89.0		P	40 - 150
Fenuron	99.5		P	40 - 150
Fluridone	84.5		P	40 - 150
Hydrocodone	112		P	40 - 150
Ibuprofen	59.2		P	40 - 150
Imazapyr	73.8		P	40 - 150
Imidacloprid	93.3		P	40 - 150
Linuron	90.9		P	40 - 150
Mandestrobin	86.3		P	40 - 150
MCPP	75.2		P	40 - 150
Naproxen	84.3		P	40 - 150
Primidone	70.9		P	40 - 150
Pyraclostrobin	83.0		P	40 - 150
Silvex	59.1		P	40 - 150
Thiamethoxam	97.2		P	40 - 150
Tolfenpyrad	44.1		P	30 - 150
Triclopyr	54.9		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P419278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P419281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P419185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P418968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353008	Calcium	106		P	80 - 120
2353008	Iron	111		P	80 - 120
2353008	Magnesium	103		P	80 - 120
2353008	Potassium	107		P	80 - 120
2353008	Sodium	103		P	80 - 120
2353008	Strontium	104		P	80 - 120
2353008	Tin	112		P	80 - 120
2353008	Titanium	110		P	80 - 120
2353008	Vanadium	109		P	80 - 120
2353008	Zinc	108		P	80 - 120
2353098	Calcium	109	111	P/P	80 - 120
2353098	Iron	109	112	P/P	80 - 120
2353098	Magnesium	107	110	P/P	80 - 120
2353098	Potassium	107	108	P/P	80 - 120
2353098	Sodium	109	111	P/P	80 - 120
2353098	Strontium	102	105	P/P	80 - 120
2353098	Tin	108	108	P/P	80 - 120
2353098	Titanium	107	109	P/P	80 - 120
2353098	Vanadium	105	106	P/P	80 - 120
2353098	Zinc	106	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P418968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353008	Aluminum	98.9		P	80 - 120
2353008	Antimony	103		P	80 - 120
2353008	Arsenic	99.6		P	80 - 120
2353008	Barium	100		P	80 - 120
2353008	Beryllium	95.4		P	80 - 120
2353008	Boron	107		P	80 - 120
2353008	Cadmium	98.6		P	80 - 120
2353008	Chromium	99.3		P	80 - 120
2353008	Cobalt	94.7		P	80 - 120
2353008	Copper	98.8		P	80 - 120
2353008	Lead	99.2		P	80 - 120
2353008	Manganese	97.5		P	80 - 120
2353008	Molybdenum	104		P	80 - 120
2353008	Nickel	93.9		P	80 - 120
2353008	Selenium	90.8		P	80 - 120
2353008	Silver	93.2		P	80 - 120
2353008	Thallium	101		P	80 - 120
2353098	Aluminum	97.8	97.4	P/P	80 - 120
2353098	Antimony	103	102	P/P	80 - 120
2353098	Arsenic	98.8	99.2	P/P	80 - 120
2353098	Barium	102	101	P/P	80 - 120
2353098	Beryllium	99.0	97.7	P/P	80 - 120
2353098	Boron	100	100	P/P	80 - 120
2353098	Cadmium	98.5	98.4	P/P	80 - 120
2353098	Chromium	97.8	96.5	P/P	80 - 120
2353098	Cobalt	96.2	95.0	P/P	80 - 120
2353098	Copper	104	104	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P418968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353098	Lead	99.7	99.7	P/P	80 - 120
2353098	Manganese	98.4	97.4	P/P	80 - 120
2353098	Molybdenum	104	103	P/P	80 - 120
2353098	Nickel	96.1	95.3	P/P	80 - 120
2353098	Selenium	90.7	91.3	P/P	80 - 120
2353098	Silver	94.5	94.3	P/P	80 - 120
2353098	Thallium	99.3	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P419468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352704	Chloride	96.6		P	90 - 110
2352758	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P419471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352704	Sulfate	93.3		P	90 - 110
2352758	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P419068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352902	Ammonia-N	96.6	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P419057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352706	NO2NO3-N	99.1	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P418986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352721	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P418802

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352891	Acesulfame K	99.6	98.9	P/P	40 - 150
2352891	AMPA	105	108	P/P	40 - 150
2352891	Endothall	92.9	96.0	P/P	40 - 150
2352891	Glufosinate	96.5	94.1	P/P	40 - 150
2352891	Glyphosate	87.9	83.3	P/P	40 - 150
2352891	Sucralose	95.8	95.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P418839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352724	2,4-D	77.7	80.5	P/P	40 - 150
2352724	2,4,5-T	81.7	83.6	P/P	40 - 150
2352724	Acetaminophen	74.0	83.6	P/P	30 - 150
2352724	Acetamiprid	47.7	45.5	P/P	40 - 150
2352724	Afidopyropen	55.7	67.7	P/P	30 - 150
2352724	Bentazon	124	121	P/P	30 - 150
2352724	Benzovindiflupyr	78.3	83.5	P/P	40 - 150
2352724	Carbamazepine	74.1	76.9	P/P	40 - 150
2352724	Clothianidin	49.8	54.6	P/P	40 - 150
2352724	Dinotefuran	94.1	108	P/P	40 - 150
2352724	Diuron	85.6	80.7	P/P	40 - 150
2352724	Fenuron	97.5	97.1	P/P	40 - 150
2352724	Fluridone	105	106	P/P	40 - 150
2352724	Hydrocodone	104	113	P/P	40 - 150
2352724	Ibuprofen	67.1	81.2	P/P	40 - 150
2352724	Imazapyr	83.1	96.8	P/P	40 - 150
2352724	Imidacloprid	66.1	74.2	P/P	40 - 150
2352724	Linuron	91.8	99.3	P/P	40 - 150
2352724	Mandestrobin	98.0	93.3	P/P	40 - 150
2352724	MCCP	88.9	95.3	P/P	40 - 150
2352724	Naproxen	125	117	P/P	40 - 150
2352724	Primidone	44.9	35.3	P/F	40 - 150
2352724	Pyraclostrobin	92.5	94.9	P/P	40 - 150
2352724	Silvex	73.9	79.1	P/P	40 - 150
2352724	Thiamethoxam	82.0	89.7	P/P	40 - 150
2352724	Tolfenpyrad	57.1	61.2	P/P	30 - 150
2352724	Triclopyr	73.3	81.5	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P419281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352991	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P419185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2353034	Organic Carbon	89.1	93.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P418891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352991	Color (true)	1.05	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P418892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352879	Color (true)	7.39	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P418968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353098	Calcium	1.63	Spike	P	0 - 20
2353098	Iron	2.55	Spike	P	0 - 20
2353098	Magnesium	2.24	Spike	P	0 - 20
2353098	Potassium	1.31	Spike	P	0 - 20
2353098	Sodium	0.952	Spike	P	0 - 20
2353098	Strontium	2.31	Spike	P	0 - 20
2353098	Tin	0.451	Spike	P	0 - 20
2353098	Titanium	2.12	Spike	P	0 - 20
2353098	Vanadium	0.996	Spike	P	0 - 20
2353098	Zinc	1.65	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P418968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353098	Aluminum	0.347	Spike	P	0 - 20
2353098	Antimony	1.41	Spike	P	0 - 20
2353098	Arsenic	0.443	Spike	P	0 - 20
2353098	Barium	0.604	Spike	P	0 - 20
2353098	Beryllium	1.25	Spike	P	0 - 20
2353098	Boron	0.0451	Spike	P	0 - 20
2353098	Cadmium	0.0424	Spike	P	0 - 20
2353098	Chromium	1.39	Spike	P	0 - 20
2353098	Cobalt	1.33	Spike	P	0 - 20
2353098	Copper	0.0407	Spike	P	0 - 20
2353098	Lead	0.0130	Spike	P	0 - 20
2353098	Manganese	0.858	Spike	P	0 - 20
2353098	Molybdenum	0.302	Spike	P	0 - 20
2353098	Nickel	0.783	Spike	P	0 - 20
2353098	Selenium	0.693	Spike	P	0 - 20
2353098	Silver	0.268	Spike	P	0 - 20
2353098	Thallium	0.918	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352704	Chloride	0.0217	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352704	Sulfate	0.0618	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352902	Ammonia-N	1.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352880	Kjeldahl Nitrogen	4.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352706	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352721	Total-P	0.467	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P418802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352891	Acesulfame K	0.674	Spike	P	0 - 30
2352891	AMPA	2.20	Spike	P	0 - 30
2352891	Endothall	3.24	Spike	P	0 - 30
2352891	Glufosinate	2.45	Spike	P	0 - 30
2352891	Glyphosate	5.37	Spike	P	0 - 30
2352891	Sucralose	0.783	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P418839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352724	2,4-D	3.61	Spike	P	0 - 30
2352724	2,4,5-T	2.26	Spike	P	0 - 30
2352724	Acetaminophen	12.1	Spike	P	0 - 30
2352724	Acetamiprid	4.64	Spike	P	0 - 30
2352724	Afidopyropen	19.4	Spike	P	0 - 30
2352724	Bentazon	1.98	Spike	P	0 - 30
2352724	Benzovindiflupyr	6.34	Spike	P	0 - 30
2352724	Carbamazepine	3.75	Spike	P	0 - 30
2352724	Clothianidin	9.25	Spike	P	0 - 30
2352724	Dinotefuran	13.7	Spike	P	0 - 30
2352724	Diuron	6.01	Spike	P	0 - 30
2352724	Fenuron	0.455	Spike	P	0 - 30
2352724	Fluridone	1.59	Spike	P	0 - 30
2352724	Hydrocodone	8.10	Spike	P	0 - 30
2352724	Ibuprofen	19.0	Spike	P	0 - 30
2352724	Imazapyr	15.2	Spike	P	0 - 30
2352724	Imidacloprid	11.5	Spike	P	0 - 30
2352724	Linuron	7.90	Spike	P	0 - 30
2352724	Mandestrobin	4.93	Spike	P	0 - 30
2352724	MCP	6.97	Spike	P	0 - 30
2352724	Naproxen	6.99	Spike	P	0 - 30
2352724	Primidone	24.0	Spike	P	0 - 30
2352724	Pyraclostrobin	2.62	Spike	P	0 - 30
2352724	Silvex	6.75	Spike	P	0 - 30
2352724	Thiamethoxam	9.02	Spike	P	0 - 30
2352724	Tolfenpyrad	6.89	Spike	P	0 - 30
2352724	Triclopyr	10.5	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P419278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352991	Total Alkalinity	0.709	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P419427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352991	TDS	7.74	Sample	P	0 - 10

Reference Method: SM 2540 C-2011

Batch ID: P419430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353615	TDS	5.88	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P419281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352991	Fluoride	0.470	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2353034	Organic Carbon	3.09	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2352891

Field Sample ID: G1TLHR0171

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.5	P	30 - 160
EPA 8321B	Diuron-d6	87.4	P	30 - 160
EPA 8321B	Endothall-d6	96.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.0	P	30 - 160
EPA 8321B	Primidone-d5	50.2	P	30 - 160
EPA 8321B	Sucralose-d6	95.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114434

Included Lab Sample IDs: 2352879, 2352883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A114439

Included Lab Sample IDs: 2352879, 2352883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	97.0	P/P	90 - 110
Color (true)	100	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114512

Included Lab Sample IDs: 2352880

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114514

Included Lab Sample IDs: 2352880, 2352884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114517

Included Lab Sample IDs: 2352880, 2352884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114523

Included Lab Sample IDs: 2352884

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114547

Included Lab Sample IDs: 2352880, 2352884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	91.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A114551

Included Lab Sample IDs: 2352891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	100	104	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A114551
Included Lab Sample IDs: 2352891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.8	97.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A114552
Included Lab Sample IDs: 2352891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	103	102	P/P	60 - 160
Endothall	98.0	88.2	P/P	60 - 160
Glufosinate	102	81.0	P/P	60 - 160
Glyphosate	95.9	97.6	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A114559
Included Lab Sample IDs: 2352893, 2352894, 2352896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	99.9	P/P	90 - 110
Calcium	99.9	104	P/P	90 - 110
Iron	101	105	P/P	90 - 110
Iron	105	101	P/P	90 - 110
Magnesium	103	99.3	P/P	90 - 110
Magnesium	99.3	104	P/P	90 - 110
Potassium	100	98.3	P/P	90 - 110
Potassium	98.3	101	P/P	90 - 110
Sodium	101	99.4	P/P	90 - 110
Sodium	99.4	102	P/P	90 - 110
Strontium	98.4	99.6	P/P	90 - 110
Strontium	99.7	98.4	P/P	90 - 110
Tin	106	108	P/P	90 - 110
Tin	108	104	P/P	90 - 110
Titanium	104	106	P/P	90 - 110
Titanium	106	103	P/P	90 - 110
Vanadium	102	101	P/P	90 - 110
Vanadium	103	102	P/P	90 - 110
Zinc	104	102	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A114566
Included Lab Sample IDs: 2352893, 2352894, 2352896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.4	97.4	P/P	90 - 110
Aluminum	96.0	95.4	P/P	90 - 110
Antimony	99.7	99.8	P/P	90 - 110
Antimony	99.8	98.6	P/P	90 - 110
Arsenic	100	98.2	P/P	90 - 110
Arsenic	99.6	100	P/P	90 - 110
Barium	95.4	97.4	P/P	90 - 110
Barium	97.4	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114566

Included Lab Sample IDs: 2352893, 2352894, 2352896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	96.6	99.9	P/P	90 - 110
Boron	96.9	96.6	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	98.1	99.2	P/P	90 - 110
Chromium	99.2	97.6	P/P	90 - 110
Cobalt	95.4	96.7	P/P	90 - 110
Cobalt	96.7	95.7	P/P	90 - 110
Manganese	98.0	98.7	P/P	90 - 110
Manganese	98.7	98.2	P/P	90 - 110
Nickel	96.2	97.2	P/P	90 - 110
Nickel	97.2	95.7	P/P	90 - 110
Selenium	96.7	97.1	P/P	90 - 110
Selenium	97.1	97.4	P/P	90 - 110
Silver	95.2	95.6	P/P	90 - 110
Silver	95.6	95.9	P/P	90 - 110
Thallium	101	100	P/P	90 - 110
Thallium	99.3	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114570

Included Lab Sample IDs: 2352880, 2352884

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	95.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114593

Included Lab Sample IDs: 2352893, 2352894, 2352896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	96.4	97.9	P/P	90 - 110
Beryllium	97.9	96.4	P/P	90 - 110
Copper	102	103	P/P	90 - 110
Copper	103	102	P/P	90 - 110
Lead	94.3	94.4	P/P	90 - 110
Lead	94.4	95.0	P/P	90 - 110
Molybdenum	100	101	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114599

Included Lab Sample IDs: 2352879, 2352883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A114599

Included Lab Sample IDs: 2352879, 2352883

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114600

Included Lab Sample IDs: 2352879, 2352883

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

Reference Method: EPA 8321B

Run ID: A114605

Included Lab Sample IDs: 2352891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.8	93.3	P/P	50 - 150
2,4,5-T	106	120	P/P	50 - 150
Acetaminophen	92.2	95.1	P/P	60 - 160
Acetamiprid	85.7	85.3	P/P	50 - 150
Afidopyropen	95.0	92.7	P/P	50 - 150
Bentazon	92.5	91.0	P/P	50 - 160
Benzovindiflupyr	99.0	115	P/P	50 - 150
Carbamazepine	117	95.6	P/P	60 - 150
Clothianidin	104	103	P/P	60 - 150
Dinotefuran	115	94.9	P/P	50 - 150
Diuron	91.4	101	P/P	60 - 160
Fenuron	83.1	88.1	P/P	60 - 150
Fluridone	109	104	P/P	60 - 160
Hydrocodone	106	77.2	P/P	60 - 150
Ibuprofen	142	147	P/P	50 - 160
Imazapyr	97.6	96.1	P/P	50 - 150
Imidacloprid	103	74.4	P/P	60 - 150
Linuron	106	111	P/P	60 - 150
Mandestrobin	97.1	112	P/P	50 - 150
MCPP	94.8	102	P/P	50 - 150
Naproxen	132	127	P/P	50 - 160
Primidone	111	112	P/P	60 - 150
Pyraclostrobin	104	111	P/P	60 - 150
Silvex	85.6	61.7	P/P	50 - 150
Thiamethoxam	96.8	111	P/P	50 - 150
Tolfenpyrad	104	125	P/P	60 - 150
Triclopyr	95.1	86.9	P/P	50 - 150

* 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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	98.8				1.05	
	Color (true)	97.0				7.39	
EPA 180.1 Rev. 2.0	Turbidity	96.7					
EPA 200.7 Rev. 4.4	Calcium	110	106	109	111		1.63
	Iron	113	111	109	112		2.55
	Magnesium	111	103	107	110		2.24
	Potassium	108	107	107	108		1.31
	Sodium	106	103	109	111		0.952
	Strontium	106	104	102	105		2.31
	Tin	111	112	108	108		0.451
	Titanium	110	110	107	109		2.12
	Vanadium	108	109	105	106		0.996
	Zinc	109	108	106	104		1.65
EPA 200.8 Rev. 5.4	Aluminum	98.9	97.8	97.4	98.9		0.347
	Antimony	103	103	102	103		1.41
	Arsenic	99.1	98.8	99.2	99.6		0.443
	Barium	102	102	101	100		0.604
	Beryllium	97.9	99.0	97.7	95.4		1.25
	Boron	103	100	100	107		0.0451
	Cadmium	100	98.5	98.4	98.6		0.0424
	Chromium	98.0	97.8	96.5	99.3		1.39
	Cobalt	96.5	96.2	95.0	94.7		1.33
	Copper	103	104	104	98.8		0.0407
	Lead	99.1	99.7	99.7	99.2		0.0130
	Manganese	100	98.4	97.4	97.5		0.858
	Molybdenum	104	104	103	104		0.302
	Nickel	96.6	96.1	95.3	93.9		0.783
	Selenium	92.0	90.7	91.3	90.8		0.693
	Silver	96.1	94.5	94.3	93.2		0.268
	Thallium	99.0	99.3	100	101		0.918
EPA 300.0 Rev. 2.1	Chloride	99.2	96.6	97.6		0.0217	
	Sulfate	97.8	93.3	95.6		0.0618	
EPA 350.1 Rev. 2.0	Ammonia-N	95.0	96.6	95.0			1.45
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.2					4.38
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.1	99.1			0.0
EPA 365.1 Rev. 2.0	Total-P	104	107	107			0.467
EPA 8321B	2,4-D	72.6	80.5	77.7			3.61
	2,4,5-T	67.1	83.6	81.7			2.26
	Acesulfame K	101	99.6	98.9			0.674
	Acetaminophen	108	74.0	83.6			12.1
	Acetamiprid	72.1	47.7	45.5			4.64
	Afidopyropen	62.7	55.7	67.7			19.4
	AMPA	104	105	108			2.20
	Bentazon	82.1	121	124			1.98
	Benzovindiflupyr	70.1	78.3	83.5			6.34
	Carbamazepine	81.4	74.1	76.9			3.75
	Clothianidin	77.8	49.8	54.6			9.25
	Dinotefuran	73.6	94.1	108			13.7
	Diuron	89.0	85.6	80.7			6.01
	Endothall	97.1	92.9	96.0			3.24
	Fenuron	99.5	97.5	97.1			0.455
	Fluridone	84.5	105	106			1.59
	Glufosinate	103	96.5	94.1			2.45
	Glyphosate	99.6	87.9	83.3			5.37

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Hydrocodone	112	104	113		8.10
	Ibuprofen	59.2	81.2	67.1		19.0
	Imazapyr	73.8	96.8	83.1		15.2
	Imidacloprid	93.3	66.1	74.2		11.5
	Linuron	90.9	91.8	99.3		7.90
	Mandestrobin	86.3	98.0	93.3		4.93
	MCP	75.2	95.3	88.9		6.97
	Naproxen	84.3	117	125		6.99
	Primidone	70.9	44.9	35.3		24.0
	Pyraclostrobin	83.0	92.5	94.9		2.62
	Silvex	59.1	79.1	73.9		6.75
	Sucralose	97.7	95.8	95.0		0.783
	Thiamethoxam	97.2	82.0	89.7		9.02
	Tolfenpyrad	44.1	57.1	61.2		6.89
	Triclopyr	54.9	81.5	73.3		10.5
SM 2320 B-2011	Total Alkalinity	99.1			0.709	
SM 2540 C-2011	TDS				7.74	
	TDS				5.88	
SM 4500-F- C-2011	Fluoride	101	102	102		0.470
SM 5310 B-2011	Organic Carbon	95.6	89.1	93.6		3.09

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2352879, 2352883
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2352879, 2352883
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2352893, 2352894, 2352896
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2352893, 2352894, 2352896
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2352879, 2352883
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2352879, 2352883
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2352880, 2352884
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2352880, 2352884
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2352880, 2352884
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2352880, 2352884
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2352891
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2352879, 2352883
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2352893, 2352894, 2352896
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2352879, 2352883
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2352879, 2352883
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2352879, 2352883
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2352880, 2352884

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	08/29/2022			08/30/2022 15:44	Anna M. Plaviak	2352883
	08/29/2022			08/30/2022 15:52	Anna M. Plaviak	2352879
EPA 180.1 Rev. 2.0	08/29/2022			08/30/2022 11:48	Chandler E Cox	2352879
	08/29/2022			08/30/2022 11:50	Chandler E Cox	2352883
EPA 200.7 Rev. 4.4	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 20:39	McKinley C Carter	2352896
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 22:13	McKinley C Carter	2352893
EPA 200.8 Rev. 5.4	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 22:21	McKinley C Carter	2352894
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 21:09	Emily M Philpot	2352896
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 23:15	Emily M Philpot	2352893
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/06/2022 23:24	Emily M Philpot	2352894
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/08/2022 02:41	Megan Whitefoot	2352896
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/08/2022 04:56	Megan Whitefoot	2352893
	08/29/2022	09/01/2022 10:15	Megan Whitefoot	09/08/2022 05:05	Megan Whitefoot	2352894
EPA 300.0 Rev. 2.1	08/29/2022			09/09/2022 21:40	Anna M. Plaviak	2352879
	08/29/2022			09/09/2022 21:55	Anna M. Plaviak	2352883
EPA 350.1 Rev. 2.0	08/29/2022			09/02/2022 13:19	Ping Hua	2352880
	08/29/2022			09/02/2022 13:30	Ping Hua	2352884
EPA 351.2 Rev. 2.0	08/29/2022	09/02/2022 08:53	Samantha L Bates	09/06/2022 11:45	Samantha L Bates	2352880
	08/29/2022	09/02/2022 08:53	Samantha L Bates	09/06/2022 11:50	Samantha L Bates	2352884
EPA 353.2 Rev. 2.0	08/29/2022			09/02/2022 10:21	Beverly Y. Sanders	2352880
	08/29/2022			09/02/2022 10:22	Beverly Y. Sanders	2352884
EPA 365.1 Rev. 2.0	08/29/2022	09/01/2022 15:55	Simonne.V. Calhoun	09/02/2022 11:08	Simonne.V. Calhoun	2352880
	08/29/2022	09/01/2022 15:55	Simonne.V. Calhoun	09/02/2022 14:27	James L Waggeberby	2352884
EPA 8321B	08/29/2022	09/01/2022 09:00	June Rhew	09/08/2022 04:13	Juyoung Kim	2352891
	08/29/2022	09/01/2022 14:00	Umesh Chiluwal	09/01/2022 22:22	Umesh Chiluwal	2352891
	08/29/2022	09/01/2022 14:00	Umesh Chiluwal	09/02/2022 23:49	Umesh Chiluwal	2352891
SM 2320 B-2011	08/29/2022			09/08/2022 05:36	Adam P Silver	2352879
	08/29/2022			09/08/2022 05:45	Adam P Silver	2352883
SM 2340 B-2011	08/29/2022			09/06/2022 20:39	McKinley C Carter	2352896
	08/29/2022			09/06/2022 22:13	McKinley C Carter	2352893
	08/29/2022			09/06/2022 22:21	McKinley C Carter	2352894
SM 2540 C-2011	08/29/2022			09/02/2022 16:08	Yijie Li	2352879, 2352883
SM 2540 D-2011	08/29/2022			09/02/2022 16:08	Yijie Li	2352879, 2352883
SM 4500-F- C-2011	08/29/2022			09/08/2022 05:36	Adam P Silver	2352879
	08/29/2022			09/08/2022 05:45	Adam P Silver	2352883
SM 5310 B-2011	08/29/2022			09/06/2022 20:37	Khloe J Berg	2352880
	08/29/2022			09/06/2022 20:50	Khloe J Berg	2352884