

Chemical Analysis Report

SW-DIST-2023-11-29-01

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

Event Description: **2023 Run 15**
Request ID: **RQ-2023-11-13-27**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 15-DEC-2023 10:52



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: HOWARD PRAIRIE BRANCH AT GRANGE HALL Collection Date/Time: 11/28/2023 09:00

Field ID: G2SW0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453075	DEP SOP: NU-094-1	Color (true)	200		PCU	P438283	
	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P438291	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P438417	
		Sulfate	15		mg SO4/L	P438418	
	SM 2320 B-2011	Total Alkalinity	109		mg CaCO3/L	P438459	
	SM 2540 C-2015	TDS	245		mg/L	P438789	
	SM 2540 D-2015	TSS	2	I	mg/L	P438694	
	SM 4500-F- C-2011	Fluoride	0.73		mg F/L	P438462	
2453077	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P438563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P438311	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P438397	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P438405	
	SM 5310 B-2011	Organic Carbon	39		mg C/L	P438378	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ALDERMAN CREEK AT MOSAIC

Collection Date/Time: 11/28/2023 09:25

Field ID: G2SW0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453076	DEP SOP: NU-094-1	Color (true)	37		PCU	P438283	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P438291	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P438417	
		Sulfate	60		mg SO4/L	P438418	
	SM 2320 B-2011	Total Alkalinity	50		mg CaCO3/L	P438459	
	SM 2540 C-2015	TDS	192	A	mg/L	P438789	
	SM 2540 D-2015	TSS	2	UA	mg/L	P438694	
	SM 4500-F- C-2011	Fluoride	0.52		mg F/L	P438462	
2453078	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P438563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P438311	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P438678	
	EPA 365.1 Rev. 2.0	Total-P	0.48		mg P/L	P438485	
	SM 5310 B-2011	Organic Carbon	7.0		mg C/L	P438378	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LIL MANATEE AT TAYLOR GRADE

Collection Date/Time: 11/28/2023 10:00

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453097	EPA 8321B	2,4-D	0.0020	U	ug/L	P438273	
		Acesulfame K	0.10	U	ug/L	P438271	
		2,4,5-T	0.0040	U	ug/L	P438273	
		AMPA	0.10	U	ug/L	P438271	
		Acetaminophen	0.0080	U	ug/L	P438273	
		Acetamiprid	0.0020	U	ug/L	P438273	
		Endothall	0.25	U	ug/L	P438271	
		Glufosinate	0.10	U	ug/L	P438271	
		Glyphosate	0.10	U	ug/L	P438271	
		Afidopyropen	0.0020	U	ug/L	P438273	
		Bentazon	8.0E-04	U	ug/L	P438273	
		Sucralose	0.038	I	ug/L	P438271	
		Benzovindiflupyr	0.0020	U	ug/L	P438273	
		Carbamazepine	8.0E-04	U	ug/L	P438273	
		Clothianidin	0.0020	U	ug/L	P438273	
		Dinotefuran	0.0048	I	ug/L	P438273	
		Diuron	0.0020	U	ug/L	P438273	
		Fenuron	0.032	U	ug/L	P438273	
		Fluridone	8.0E-04	U	ug/L	P438273	
		Imazapyr	0.043		ug/L	P438273	
		Hydrocodone	0.0020	U	ug/L	P438273	
		Ibuprofen	0.080	U	ug/L	P438273	
		Imidacloprid	0.0020	I	ug/L	P438273	
		Linuron	0.0040	U	ug/L	P438273	
		Mandestrobin	0.0020	U	ug/L	P438273	
		MCPP	0.0020	U	ug/L	P438273	
		Naproxen	0.0080	U	ug/L	P438273	
		Primidone	0.0040	U	ug/L	P438273	
		Pyraclostrobin	0.0020	U	ug/L	P438273	
		Silvex	0.0040	U	ug/L	P438273	
		Thiamethoxam	0.0020	U	ug/L	P438273	
		Tolfenpyrad	0.0020	U	ug/L	P438273	
		Triclopyr	0.0040	U	ug/L	P438273	
2453099	EPA 200.7 Rev. 4.4	Calcium	15.5		mg/L	P438276	
		Iron	250		ug/L	P438276	
		Magnesium	7.23		mg/L	P438276	
		Potassium	3.4		mg/L	P438276	
		Sodium	9.3		mg/L	P438276	
		Strontium	164		ug/L	P438276	
		Tin	3.0	U	ug/L	P438276	
		Titanium	0.75	U	ug/L	P438276	
		Vanadium	2.0	U	ug/L	P438276	
		Zinc	5.0	U	ug/L	P438276	
	EPA 200.8 Rev. 5.4	Aluminum	88		ug/L	P438276	

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453099	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P438276	
		Arsenic	0.34		ug/L	P438276	
		Barium	6.81		ug/L	P438276	
		Beryllium	0.010	U	ug/L	P438276	
		Boron	31.6		ug/L	P438276	
		Cadmium	0.020	U	ug/L	P438276	
		Chromium	0.53	I	ug/L	P438453	
		Cobalt	0.054	I	ug/L	P438276	
		Copper	0.72	I	ug/L	P438276	
		Lead	0.20	U	ug/L	P438276	
		Manganese	13.4		ug/L	P438276	
		Molybdenum	0.21	I	ug/L	P438276	
		Nickel	0.50	U	ug/L	P438276	
		Selenium	0.20	U	ug/L	P438276	
		Silver	0.010	U	ug/L	P438276	
		Thallium	0.10	U	ug/L	P438276	
	SM 2340 B-2011	Hardness	68.5		mg/L	P438276	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: LIL MANATEE RIVER S FORK AT SAFFOLD RD Collection Date/Time: 11/28/2023 10:35

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453098	EPA 8321B	2,4-D	0.0020	U	ug/L	P438273	
		Acesulfame K	0.10	U	ug/L	P438271	
		2,4,5-T	0.0040	U	ug/L	P438273	
		AMPA	0.10	U	ug/L	P438271	
		Acetaminophen	0.0080	U	ug/L	P438273	
		Acetamiprid	0.0020	U	ug/L	P438273	
		Endothall	0.25	U	ug/L	P438271	
		Glufosinate	0.10	U	ug/L	P438271	
		Glyphosate	0.10	U	ug/L	P438271	
		Afidopyropen	0.0020	U	ug/L	P438273	
		Bentazon	0.026		ug/L	P438273	
		Sucralose	0.020	I	ug/L	P438271	
		Benzovindiflupyr	0.0020	U	ug/L	P438273	
		Carbamazepine	8.0E-04	U	ug/L	P438273	
		Clothianidin	0.036		ug/L	P438273	
		Dinotefuran	0.0068	I	ug/L	P438273	
		Diuron	0.0020	U	ug/L	P438273	
		Fenuron	0.032	U	ug/L	P438273	
		Fluridone	8.0E-04	U	ug/L	P438273	
		Imazapyr	0.028		ug/L	P438273	
		Hydrocodone	0.0020	U	ug/L	P438273	
		Ibuprofen	0.080	U	ug/L	P438273	
		Imidacloprid	0.087		ug/L	P438273	
		Linuron	0.0040	U	ug/L	P438273	
		Mandestrobin	0.0020	U	ug/L	P438273	
		MCPP	0.0020	U	ug/L	P438273	
		Naproxen	0.0080	U	ug/L	P438273	
		Primidone	0.0040	U	ug/L	P438273	
		Pyraclostrobin	0.0020	U	ug/L	P438273	
		Silvex	0.0040	U	ug/L	P438273	
		Thiamethoxam	0.040		ug/L	P438273	
		Tolfenpyrad	0.0020	U	ug/L	P438273	
		Triclopyr	0.0040	U	ug/L	P438273	
2453100	EPA 200.7 Rev. 4.4	Calcium	19.7		mg/L	P438276	
		Iron	220		ug/L	P438276	
		Magnesium	9.47		mg/L	P438276	
		Potassium	5.3		mg/L	P438276	
		Sodium	7.0		mg/L	P438276	
		Strontium	541		ug/L	P438276	
		Tin	3.0	U	ug/L	P438276	
		Titanium	0.75	U	ug/L	P438276	
		Vanadium	2.7	I	ug/L	P438276	
		Zinc	5.0	U	ug/L	P438276	
	EPA 200.8 Rev. 5.4	Aluminum	265		ug/L	P438276	

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453100	EPA 200.8 Rev. 5.4	Antimony	0.055	I	ug/L	P438276	
		Arsenic	0.25		ug/L	P438276	
		Barium	18.0		ug/L	P438276	
		Beryllium	0.027	I	ug/L	P438276	
		Boron	33.2		ug/L	P438276	
		Cadmium	0.110		ug/L	P438276	
		Chromium	0.53	I	ug/L	P438453	
		Cobalt	0.132		ug/L	P438276	
		Copper	1.20		ug/L	P438276	
		Lead	0.20	U	ug/L	P438276	
		Manganese	10.2		ug/L	P438276	
		Molybdenum	0.48	I	ug/L	P438276	
		Nickel	0.50	U	ug/L	P438276	
		Selenium	0.20	U	ug/L	P438276	
		Silver	0.010	U	ug/L	P438276	
		Thallium	0.10	U	ug/L	P438276	
	SM 2340 B-2011	Hardness	88.2		mg/L	P438276	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438283

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438291

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438276

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: P438276

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
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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438453

Component	Result	Code	Units
Chromium	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438563

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438397

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438678

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438405

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438485

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

Reference Method: EPA 8321B
Batch ID: P438271

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P438271

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P438273

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	0.032	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	0.0020	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: P438459

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

Reference Method: SM 2540 C-2015

Batch ID: P438789

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P438694

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P438378

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: P438283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438291

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	102		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	102		P	85 - 115
Strontium	97.2		P	85 - 115
Tin	98.2		P	85 - 115
Titanium	96.3		P	85 - 115
Vanadium	97.1		P	85 - 115
Zinc	96.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	98.2		P	85 - 115
Barium	103		P	85 - 115
Beryllium	94.4		P	85 - 115
Boron	106		P	85 - 115
Cadmium	102		P	85 - 115
Cobalt	98.1		P	85 - 115
Copper	95.9		P	85 - 115
Lead	96.9		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	98.6		P	85 - 115
Nickel	97.8		P	85 - 115
Selenium	98.8		P	85 - 115
Silver	104		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438453

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	102		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438563

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438678

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: P438405

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438485

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

Reference Method: EPA 8321B
Batch ID: P438271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	132		P	40 - 150
AMPA	93.4		P	40 - 160
Endothall	111		P	40 - 160
Glufosinate	90.4		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P438271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	96.3		P	40 - 160
Sucralose	114		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	108		P	40 - 150
2,4,5-T	101		P	40 - 150
Acetaminophen	95.9		P	30 - 150
Acetamiprid	90.9		P	40 - 150
Afidopyropen	81.0		P	30 - 150
Bentazon	79.4		P	30 - 150
Benzovindiflupyr	83.8		P	40 - 150
Carbamazepine	88.6		P	40 - 150
Clothianidin	94.1		P	40 - 150
Dinotefuran	105		P	40 - 150
Diuron	81.4		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	95.2		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	67.7		P	40 - 150
Imazapyr	90.0		P	40 - 150
Imidacloprid	89.2		P	40 - 150
Linuron	84.8		P	40 - 150
Mandestrobin	93.0		P	40 - 150
MCPP	91.1		P	40 - 150
Naproxen	73.3		P	40 - 150
Primidone	87.5		P	40 - 150
Pyraclostrobin	76.5		P	40 - 150
Silvex	85.5		P	40 - 150
Thiamethoxam	95.8		P	40 - 150
Tolfenpyrad	50.8		P	30 - 150
Triclopyr	115		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P438459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.2		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	99.6		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P438694

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

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

Reference Method: SM 5310 B-2011
Batch ID: P438378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452737	Calcium	103	102	P/P	80 - 120
2452737	Iron	103	102	P/P	80 - 120
2452737	Magnesium	105	104	P/P	80 - 120
2452737	Potassium	104	103	P/P	80 - 120
2452737	Sodium	101	99.7	P/P	80 - 120
2452737	Strontium	97.1	96.1	P/P	80 - 120
2452737	Tin	97.5	97.0	P/P	80 - 120
2452737	Titanium	96.1	94.7	P/P	80 - 120
2452737	Vanadium	96.1	95.3	P/P	80 - 120
2452737	Zinc	96.4	95.2	P/P	80 - 120
2453042	Calcium	101		P	80 - 120
2453042	Iron	102		P	80 - 120
2453042	Magnesium	103		P	80 - 120
2453042	Potassium	100		P	80 - 120
2453042	Sodium	101		P	80 - 120
2453042	Strontium	97.0		P	80 - 120
2453042	Tin	93.8		P	80 - 120
2453042	Titanium	93.2		P	80 - 120
2453042	Vanadium	96.7		P	80 - 120
2453042	Zinc	97.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452737	Aluminum	100	101	P/P	80 - 120
2452737	Antimony	102	102	P/P	80 - 120
2452737	Arsenic	96.8	98.2	P/P	80 - 120
2452737	Barium	102	103	P/P	80 - 120
2452737	Beryllium	94.3	92.6	P/P	80 - 120
2452737	Boron	106	108	P/P	80 - 120
2452737	Cadmium	101	103	P/P	80 - 120
2452737	Cobalt	97.1	99.8	P/P	80 - 120
2452737	Copper	95.6	98.1	P/P	80 - 120
2452737	Lead	96.1	97.0	P/P	80 - 120
2452737	Manganese	101	103	P/P	80 - 120
2452737	Molybdenum	97.7	98.6	P/P	80 - 120
2452737	Nickel	103	99.8	P/P	80 - 120
2452737	Selenium	97.1	99.0	P/P	80 - 120
2452737	Silver	102	103	P/P	80 - 120
2452737	Thallium	101	102	P/P	80 - 120
2453042	Antimony	94.4		P	80 - 120
2453042	Arsenic	94.7		P	80 - 120
2453042	Barium	100		P	80 - 120
2453042	Beryllium	91.4		P	80 - 120
2453042	Boron	109		P	80 - 120
2453042	Cadmium	99.7		P	80 - 120
2453042	Cobalt	96.8		P	80 - 120
2453042	Copper	94.5		P	80 - 120
2453042	Lead	95.4		P	80 - 120
2453042	Manganese	90.7		P	80 - 120
2453042	Molybdenum	95.1		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453042	Nickel	97.4		P	80 - 120
2453042	Selenium	94.9		P	80 - 120
2453042	Silver	101		P	80 - 120
2453042	Thallium	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454047	Chromium	101	102	P/P	80 - 120
2454148	Chromium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453048	Chloride	103		P	90 - 110
2453122	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453048	Sulfate	102		P	90 - 110
2453122	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453053	Ammonia-N	96.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453052	Kjeldahl Nitrogen	97.0	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453077	NO2NO3-N	91.0	91.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453712	NO2NO3-N	99.0	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453051	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453418	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P438271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452969	Acesulfame K	87.0	94.3	P/P	40 - 150
2452969	AMPA	76.0	82.1	P/P	40 - 160
2452969	Endothall	108	102	P/P	40 - 160
2452969	Glufosinate	87.9	83.1	P/P	40 - 160
2452969	Glyphosate	87.1	90.1	P/P	40 - 160
2452969	Sucralose	68.4	66.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452969	2,4-D	84.0	100	P/P	40 - 150
2452969	2,4,5-T	78.7	88.6	P/P	40 - 150
2452969	Acetaminophen	80.7	89.5	P/P	30 - 150
2452969	Acetamiprid	73.3	82.9	P/P	40 - 150
2452969	Afidopyropen	74.8	79.3	P/P	30 - 150
2452969	Bentazon	30.6	36.1	P/P	30 - 150
2452969	Benzovindiflupyr	73.9	81.7	P/P	40 - 150
2452969	Carbamazepine	62.6	68.5	P/P	40 - 150
2452969	Clothianidin	94.0	106	P/P	40 - 150
2452969	Dinotefuran	93.6	104	P/P	40 - 150
2452969	Diuron	56.5	60.3	P/P	40 - 150
2452969	Fenuron	75.2	77.0	P/P	40 - 150
2452969	Fluridone	67.1	73.3	P/P	40 - 150
2452969	Hydrocodone	85.6	93.3	P/P	40 - 150
2452969	Ibuprofen	57.3	64.1	P/P	40 - 150
2452969	Imazapyr	94.3	103	P/P	40 - 150
2452969	Imidacloprid	113	124	P/P	40 - 150
2452969	Linuron	65.4	70.1	P/P	40 - 150
2452969	Mandestrobin	80.1	87.4	P/P	40 - 150
2452969	MCPP	75.5	90.1	P/P	40 - 150
2452969	Naproxen	85.2	72.9	P/P	40 - 150
2452969	Primidone	87.1	96.2	P/P	40 - 150
2452969	Pyraclostrobin	74.5	84.2	P/P	40 - 150
2452969	Silvex	83.7	83.0	P/P	40 - 150
2452969	Thiamethoxam	90.2	99.8	P/P	40 - 150
2452969	Tolfenpyrad	46.5	54.4	P/P	30 - 150
2452969	Triclopyr	89.1	84.0	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453619	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453050	Organic Carbon	94.8	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453033	Color (true)	3.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453075	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452737	Calcium	0.708	Spike	P	0 - 20
2452737	Iron	1.15	Spike	P	0 - 20
2452737	Magnesium	1.36	Spike	P	0 - 20
2452737	Potassium	0.972	Spike	P	0 - 20
2452737	Sodium	0.998	Spike	P	0 - 20
2452737	Strontium	0.984	Spike	P	0 - 20
2452737	Tin	0.509	Spike	P	0 - 20
2452737	Titanium	1.42	Spike	P	0 - 20
2452737	Vanadium	0.896	Spike	P	0 - 20
2452737	Zinc	1.26	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452737	Aluminum	0.656	Spike	P	0 - 20
2452737	Antimony	0.865	Spike	P	0 - 20
2452737	Arsenic	1.39	Spike	P	0 - 20
2452737	Barium	0.808	Spike	P	0 - 20
2452737	Beryllium	1.80	Spike	P	0 - 20
2452737	Boron	2.04	Spike	P	0 - 20
2452737	Cadmium	2.30	Spike	P	0 - 20
2452737	Cobalt	2.82	Spike	P	0 - 20
2452737	Copper	2.18	Spike	P	0 - 20
2452737	Lead	0.988	Spike	P	0 - 20
2452737	Manganese	1.75	Spike	P	0 - 20
2452737	Molybdenum	0.946	Spike	P	0 - 20
2452737	Nickel	3.24	Spike	P	0 - 20
2452737	Selenium	1.87	Spike	P	0 - 20
2452737	Silver	0.462	Spike	P	0 - 20
2452737	Thallium	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454047	Chromium	0.374	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453048	Chloride	0.630	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453048	Sulfate	0.515	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453053	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453052	Kjeldahl Nitrogen	0.224	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453077	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453712	NO2NO3-N	1.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453051	Total-P	0.194	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P438485

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453418	Total-P	0.0225	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P438271

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452969	Acesulfame K	8.09	Spike	P	0 - 30
2452969	AMPA	7.70	Spike	P	0 - 30
2452969	Endothall	6.06	Spike	P	0 - 30
2452969	Glufosinate	5.55	Spike	P	0 - 30
2452969	Glyphosate	3.41	Spike	P	0 - 30
2452969	Sucralose	2.26	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P438273

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452969	2,4-D	17.7	Spike	P	0 - 30
2452969	2,4,5-T	11.9	Spike	P	0 - 30
2452969	Acetaminophen	10.4	Spike	P	0 - 30
2452969	Acetamiprid	12.3	Spike	P	0 - 30
2452969	Afidopyropen	5.84	Spike	P	0 - 30
2452969	Bentazon	16.5	Spike	P	0 - 30
2452969	Benzovindiflupyr	10.0	Spike	P	0 - 30
2452969	Carbamazepine	8.97	Spike	P	0 - 30
2452969	Clothianidin	11.6	Spike	P	0 - 30
2452969	Dinotefuran	10.8	Spike	P	0 - 30
2452969	Diuron	6.60	Spike	P	0 - 30
2452969	Fenuron	2.41	Spike	P	0 - 30
2452969	Fluridone	8.89	Spike	P	0 - 30
2452969	Hydrocodone	8.53	Spike	P	0 - 30
2452969	Ibuprofen	11.2	Spike	P	0 - 30
2452969	Imazapyr	8.94	Spike	P	0 - 30
2452969	Imidacloprid	9.25	Spike	P	0 - 30
2452969	Linuron	6.94	Spike	P	0 - 30
2452969	Mandestrobin	8.75	Spike	P	0 - 30
2452969	MCP	17.6	Spike	P	0 - 30
2452969	Naproxen	15.6	Spike	P	0 - 30
2452969	Primidone	9.90	Spike	P	0 - 30
2452969	Pyraclostrobin	12.2	Spike	P	0 - 30
2452969	Silvex	0.806	Spike	P	0 - 30
2452969	Thiamethoxam	10.2	Spike	P	0 - 30
2452969	Tolfenpyrad	15.6	Spike	P	0 - 30
2452969	Triclopyr	5.90	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P438459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Total Alkalinity	0.587	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453076	TDS	7.79	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Fluoride	0.495	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P438378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453050	Organic Carbon	0.0513	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2453097
Field Sample ID: G2SW0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.7	P	30 - 160
EPA 8321B	Diuron-d6	59.4	P	30 - 160
EPA 8321B	Endothall-d6	83.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.7	P	30 - 160
EPA 8321B	Primidone-d5	81.8	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	30 - 160

Lab Sample ID: 2453098
Field Sample ID: G2SW0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	89.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.3	P	30 - 160
EPA 8321B	Diuron-d6	54.3	P	30 - 160
EPA 8321B	Endothall-d6	87.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	66.2	P	30 - 160
EPA 8321B	Primidone-d5	84.3	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122937

Included Lab Sample IDs: 2453075, 2453076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122940

Included Lab Sample IDs: 2453075, 2453076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122949

Included Lab Sample IDs: 2453075, 2453076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	101	P/P	90 - 110
Sulfate	98.2	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122971

Included Lab Sample IDs: 2453077, 2453078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.9	P/P	90 - 110
Organic Carbon	95.9	95.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122972

Included Lab Sample IDs: 2453097, 2453098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	100	P/P	50 - 150
2,4,5-T	102	103	P/P	50 - 150
Acetaminophen	114	110	P/P	60 - 160
Acetamiprid	105	105	P/P	50 - 150
Afidopyropen	110	98.0	P/P	50 - 150
Bentazon	103	92.0	P/P	50 - 160
Benzovindiflupyr	103	104	P/P	50 - 150
Carbamazepine	103	108	P/P	60 - 150
Clothianidin	109	100	P/P	60 - 150
Dinotefuran	108	111	P/P	50 - 150
Diuron	104	104	P/P	60 - 160
Fenuron	103	103	P/P	60 - 150
Fluridone	113	112	P/P	60 - 160
Hydrocodone	117	119	P/P	60 - 150
Ibuprofen	80.1	81.7	P/P	50 - 160
Imazapyr	97.8	85.9	P/P	50 - 150
Imidacloprid	98.7	94.0	P/P	60 - 150
Linuron	112	99.9	P/P	60 - 150
Mandestrobin	108	110	P/P	50 - 150
MCPP	109	96.3	P/P	50 - 150
Naproxen	108	125	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122972

Included Lab Sample IDs: 2453097, 2453098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	97.5	103	P/P	60 - 150
Pyraclostrobin	101	105	P/P	60 - 150
Silvex	96.6	106	P/P	50 - 150
Thiamethoxam	108	108	P/P	50 - 150
Tolfenpyrad	98.0	100	P/P	60 - 150
Triclopyr	108	93.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122975

Included Lab Sample IDs: 2453099, 2453100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Antimony	102	101	P/P	90 - 110
Arsenic	98.7	97.0	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Beryllium	95.7	95.8	P/P	90 - 110
Boron	107	105	P/P	90 - 110
Cadmium	103	102	P/P	90 - 110
Cobalt	99.1	97.9	P/P	90 - 110
Copper	97.3	96.8	P/P	90 - 110
Lead	98.0	96.9	P/P	90 - 110
Manganese	106	102	P/P	90 - 110
Molybdenum	100	98.8	P/P	90 - 110
Nickel	98.7	97.0	P/P	90 - 110
Selenium	101	98.9	P/P	90 - 110
Silver	101	99.9	P/P	90 - 110
Thallium	100	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122977

Included Lab Sample IDs: 2453097, 2453098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	86.8	87.6	P/P	60 - 160
Endothall	106	99.6	P/P	60 - 160
Glufosinate	89.9	89.6	P/P	60 - 160
Glyphosate	94.1	91.0	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122978

Included Lab Sample IDs: 2453077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.5	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122986

Included Lab Sample IDs: 2453077, 2453078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122986

Included Lab Sample IDs: 2453077, 2453078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122994

Included Lab Sample IDs: 2453097, 2453098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	134	107	P/P	60 - 160
Sucralose	112	121	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A123013

Included Lab Sample IDs: 2453075, 2453076

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.4	97.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A123013

Included Lab Sample IDs: 2453075, 2453076

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123026

Included Lab Sample IDs: 2453077

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A123042

Included Lab Sample IDs: 2453099, 2453100

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123045

Included Lab Sample IDs: 2453078

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	96.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123056

Included Lab Sample IDs: 2453077, 2453078

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123088

Included Lab Sample IDs: 2453078

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123155

Included Lab Sample IDs: 2453099, 2453100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.2	99.1	P/P	90 - 110
Calcium	99.1	95.9	P/P	90 - 110
Iron	98.3	99.8	P/P	90 - 110
Iron	99.8	96.6	P/P	90 - 110
Magnesium	100	96.4	P/P	90 - 110
Magnesium	98.2	100	P/P	90 - 110
Potassium	96.6	98.6	P/P	90 - 110
Potassium	98.6	96.0	P/P	90 - 110
Sodium	95.8	96.8	P/P	90 - 110
Sodium	96.8	94.9	P/P	90 - 110
Strontium	92.5	94.0	P/P	90 - 110
Strontium	98.9	92.5	P/P	90 - 110
Tin	92.1	93.2	P/P	90 - 110
Tin	97.5	92.1	P/P	90 - 110
Titanium	92.3	92.7	P/P	90 - 110
Titanium	96.8	92.3	P/P	90 - 110
Vanadium	92.3	92.4	P/P	90 - 110
Vanadium	96.5	92.3	P/P	90 - 110
Zinc	91.8	92.5	P/P	90 - 110
Zinc	96.8	91.8	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
DEP SOP: NU-094-1	Color (true)	101					3.19	
EPA 180.1 Rev. 2.0	Turbidity	104					1.19	
EPA 200.7 Rev. 4.4	Calcium	103	103	102	101			0.708
	Iron	102	103	102	102			1.15
	Magnesium	105	105	104	103			1.36
	Potassium	101	104	103	100			0.972
	Sodium	102	101	101	99.7			0.998
	Strontium	97.2	97.1	96.1	97.0			0.984
	Tin	98.2	97.5	97.0	93.8			0.509
	Titanium	96.3	96.1	94.7	93.2			1.42
	Vanadium	97.1	96.1	95.3	96.7			0.896
	Zinc	96.7	96.4	95.2	97.3			1.26
EPA 200.8 Rev. 5.4	Aluminum	101	100	101				0.656
	Antimony	103	102	102	94.4			0.865
	Arsenic	98.2	96.8	98.2	94.7			1.39
	Barium	103	102	103	100			0.808
	Beryllium	94.4	94.3	92.6	91.4			1.80
	Boron	106	106	108	109			2.04
	Cadmium	102	101	103	99.7			2.30
	Chromium	102	101	102	102			0.374
	Cobalt	98.1	97.1	99.8	96.8			2.82
	Copper	95.9	95.6	98.1	94.5			2.18
	Lead	96.9	96.1	97.0	95.4			0.988
	Manganese	102	101	103	90.7			1.75
	Molybdenum	98.6	97.7	98.6	95.1			0.946
	Nickel	97.8	103	99.8	97.4			3.24
	Selenium	98.8	97.1	99.0	94.9			1.87
	Silver	104	102	103	101			0.462
	Thallium	100	101	102	101			1.23
EPA 300.0 Rev. 2.1	Chloride	101	103	99.3			0.630	
	Sulfate	102	102	99.8			0.515	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	96.8	98.0				1.16
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	97.0	96.7				0.224
EPA 353.2 Rev. 2.0	NO2NO3-N	95.5	91.0	91.4				0.477
	NO2NO3-N	99.5	99.0	100				1.50
EPA 365.1 Rev. 2.0	Total-P	107	108	108				0.194
	Total-P	103	104	104				0.0225
EPA 8321B	2,4-D	108	84.0	100				17.7
	2,4,5-T	101	78.7	88.6				11.9
	Acesulfame K	132	87.0	94.3				8.09
	Acetaminophen	95.9	80.7	89.5				10.4
	Acetamiprid	90.9	73.3	82.9				12.3
	Afidopyropen	81.0	74.8	79.3				5.84
	AMPA	93.4	76.0	82.1				7.70
	Bentazon	79.4	30.6	36.1				16.5
	Benzovindiflupyr	83.8	73.9	81.7				10.0
	Carbamazepine	88.6	62.6	68.5				8.97
	Clothianidin	94.1	94.0	106				11.6
	Dinotefuran	105	93.6	104				10.8
	Diuron	81.4	56.5	60.3				6.60
	Endothall	111	108	102				6.06
	Fenuron	103	75.2	77.0				2.41
	Fluridone	95.2	67.1	73.3				8.89
	Glufosinate	90.4	87.9	83.1				5.55

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glyphosate	96.3	87.1	90.1		3.41
	Hydrocodone	105	85.6	93.3		8.53
	Ibuprofen	67.7	57.3	64.1		11.2
	Imazapyr	90.0	94.3	103		8.94
	Imidacloprid	89.2	113	124		9.25
	Linuron	84.8	65.4	70.1		6.94
	Mandestrobin	93.0	80.1	87.4		8.75
	MCP	91.1	75.5	90.1		17.6
	Naproxen	73.3	85.2	72.9		15.6
	Primidone	87.5	87.1	96.2		9.90
	Pyraclostrobin	76.5	74.5	84.2		12.2
	Silvex	85.5	83.7	83.0		0.806
	Sucralose	114	68.4	66.9		2.26
	Thiamethoxam	95.8	90.2	99.8		10.2
	Tolfenpyrad	50.8	46.5	54.4		15.6
	Triclopyr	115	89.1	84.0		5.90
SM 2320 B-2011	Total Alkalinity	96.2			0.587	
SM 2540 C-2015	TDS	99.6			7.79	
SM 2540 D-2015	TSS	96.0				
SM 4500-F- C-2011	Fluoride	101	102	102		0.495
SM 5310 B-2011	Organic Carbon	95.8	94.8	94.9		0.0513

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2453075, 2453076
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2453075, 2453076
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2453099, 2453100
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2453099, 2453100
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2453075, 2453076
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2453075, 2453076
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2453077, 2453078
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2453077, 2453078
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2453077, 2453078
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2453077, 2453078
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2453097, 2453098
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2453075, 2453076
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2453099, 2453100
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2453075, 2453076
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2453075, 2453076
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2453075, 2453076
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2453077, 2453078

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	11/29/2023			11/29/2023 13:55	Chandler E Cox	2453075, 2453076
EPA 180.1 Rev. 2.0	11/29/2023			11/29/2023 13:26	Anna M. Plaviak	2453075
	11/29/2023			11/29/2023 13:27	Anna M. Plaviak	2453076
EPA 200.7 Rev. 4.4	11/29/2023	11/29/2023 13:50	George D Taylor	12/11/2023 20:48	McKinley C Carter	2453099
	11/29/2023	11/29/2023 13:50	George D Taylor	12/11/2023 21:26	McKinley C Carter	2453100
EPA 200.8 Rev. 5.4	11/29/2023	11/29/2023 13:50	George D Taylor	11/30/2023 21:19	Emily M Philpot	2453099
	11/29/2023	11/29/2023 13:50	George D Taylor	11/30/2023 21:28	Emily M Philpot	2453100
	11/29/2023	12/04/2023 13:55	George D Taylor	12/05/2023 17:16	Emily M Philpot	2453099
	11/29/2023	12/04/2023 13:55	George D Taylor	12/05/2023 17:25	Emily M Philpot	2453100
EPA 300.0 Rev. 2.1	11/29/2023			11/30/2023 17:32	James L Waggeberby	2453075
	11/29/2023			11/30/2023 17:47	James L Waggeberby	2453076
EPA 350.1 Rev. 2.0	11/29/2023			12/06/2023 12:30	Khloe J Berg	2453077
	11/29/2023			12/06/2023 12:32	Khloe J Berg	2453078
EPA 351.2 Rev. 2.0	11/29/2023	11/30/2023 10:58	Simonne.V. Calhoun	12/01/2023 11:07	Ping Hua	2453077
	11/29/2023	11/30/2023 10:58	Simonne.V. Calhoun	12/01/2023 11:08	Ping Hua	2453078
EPA 353.2 Rev. 2.0	11/29/2023			11/30/2023 11:43	Anna M. Plaviak	2453077
	11/29/2023			12/07/2023 15:13	Fadila Guebre	2453078
EPA 365.1 Rev. 2.0	11/29/2023	12/04/2023 08:33	Adam P Silver	12/05/2023 11:26	James L Waggeberby	2453077
	11/29/2023	12/05/2023 12:17	Adam P Silver	12/06/2023 10:01	James L Waggeberby	2453078
EPA 8321B	11/29/2023	11/30/2023 10:00	Hana Lee	11/30/2023 11:41	Tae K Lee	2453097
	11/29/2023	11/30/2023 10:00	Hana Lee	11/30/2023 11:55	Tae K Lee	2453098
	11/29/2023	11/30/2023 10:00	Hana Lee	12/01/2023 20:20	Tae K Lee	2453097
	11/29/2023	11/30/2023 10:00	Hana Lee	12/01/2023 20:34	Tae K Lee	2453098
	11/29/2023	11/30/2023 13:00	Hoor Shaik	11/30/2023 18:34	Juyoung Kim	2453097
	11/29/2023	11/30/2023 13:00	Hoor Shaik	11/30/2023 18:52	Juyoung Kim	2453098
SM 2320 B-2011	11/29/2023			12/02/2023 00:53	Dale L. Simmons	2453075
	11/29/2023			12/02/2023 01:06	Dale L. Simmons	2453076
SM 2340 B-2011	11/29/2023			12/11/2023 20:48	McKinley C Carter	2453099
	11/29/2023			12/11/2023 21:26	McKinley C Carter	2453100
SM 2540 C-2015	11/29/2023			12/01/2023 15:02	Yijie Li	2453075, 2453076
SM 2540 D-2015	11/29/2023			12/01/2023 15:02	Yijie Li	2453075, 2453076
SM 4500-F- C-2011	11/29/2023			12/02/2023 00:53	Dale L. Simmons	2453075
	11/29/2023			12/02/2023 01:06	Dale L. Simmons	2453076
SM 5310 B-2011	11/29/2023			11/30/2023 19:32	Kenneth H Lee	2453077
	11/29/2023			11/30/2023 20:16	Kenneth H Lee	2453078