

Chemical Analysis Report

SW-DIST-2023-02-23-01

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

Event Description: **2023 Run 15**
Request ID: **RQ-2023-02-20-36**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Date Certified: 16-MAR-2023 09:56



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 @ Grange Hall

Collection Date/Time: 02/22/2023 10:50

Field ID: G2SW0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389842	DEP SOP: NU-094-1	Color (true)	150		PCU	P426304	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P426310	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P426868	
		Sulfate	15		mg SO4/L	P426872	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	242	A	mg/L	P426803	
	SM 2540 D-2015	TSS	2	IA	mg/L	P426741	
	SM 4500-F- C-2011	Fluoride	0.67		mg F/L	P426598	
2389844	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P426544	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P426844	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P426581	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P426453	
	SM 5310 B-2011	Organic Carbon	31		mg C/L	P426788	
2389846	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.29		mg P/L	P426306	

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 @ Mosaic

Collection Date/Time: 02/22/2023 11:00

Field ID: G2SW0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389843	DEP SOP: NU-094-1	Color (true)	46	A	PCU	P426305	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P426310	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P426868	
		Sulfate	56		mg SO4/L	P426872	
	SM 2320 B-2011	Total Alkalinity	54		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	186		mg/L	P426803	
	SM 2540 D-2015	TSS	2	U	mg/L	P426741	
	SM 4500-F- C-2011	Fluoride	0.59		mg F/L	P426598	
2389845	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P426544	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P426844	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P426581	
	EPA 365.1 Rev. 2.0	Total-P	0.46		mg P/L	P426453	
	SM 5310 B-2011	Organic Carbon	8.1		mg C/L	P426788	
2389847	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.37		mg P/L	P426306	

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 @ Taylor Grade

Collection Date/Time: 02/22/2023 11:55

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389856	EPA 8321B	2,4-D	0.0020	U	ug/L	P426469	
		Acesulfame K	0.10	U	ug/L	P426216	
		2,4,5-T	0.0040	U	ug/L	P426469	
		AMPA	0.11	I	ug/L	P426216	
		Acetaminophen	0.0080	U	ug/L	P426469	
		Acetamiprid	0.0020	U	ug/L	P426469	
		Endothall	0.25	U	ug/L	P426216	
		Glufosinate	0.10	U	ug/L	P426216	
		Glyphosate	0.10	U	ug/L	P426216	
		Afidopyropen	0.0020	UQ	ug/L	P426586	RPD
		Bentazon	0.0015	I	ug/L	P426469	
		Sucralose	0.055		ug/L	P426216	
		Benzovindiflupyr	0.0020	U	ug/L	P426469	
		Carbamazepine	8.0E-04	U	ug/L	P426469	
		Clothianidin	0.0020	U	ug/L	P426469	
		Dinotefuran	0.0089		ug/L	P426469	
		Diuron	0.0020	U	ug/L	P426469	
		Fenuron	0.032	U	ug/L	P426469	
		Fluridone	8.0E-04	U	ug/L	P426469	
		Imazapyr	0.058		ug/L	P426469	
		Hydrocodone	0.0020	U	ug/L	P426469	
		Ibuprofen	0.080	U	ug/L	P426469	
		Imidacloprid	0.0020	U	ug/L	P426469	
		Linuron	0.0040	U	ug/L	P426469	
		Mandestrobin	0.0020	U	ug/L	P426469	
		MCPP	0.0020	U	ug/L	P426469	
		Naproxen	0.0080	U	ug/L	P426469	
		Primidone	0.0040	U	ug/L	P426469	
		Pyraclostrobin	0.0020	U	ug/L	P426469	
		Silvex	0.0040	U	ug/L	P426469	
		Thiamethoxam	0.0020	U	ug/L	P426469	
		Tolfenpyrad	0.0020	U	ug/L	P426469	
		Triclopyr	0.0040	U	ug/L	P426469	
2389858	EPA 200.7 Rev. 4.4	Calcium	15.8		mg/L	P426398	
		Iron	180		ug/L	P426398	
		Magnesium	7.13		mg/L	P426398	
		Potassium	3.1		mg/L	P426398	
		Sodium	8.8		mg/L	P426398	
		Strontium	234		ug/L	P426398	
		Tin	3.0	U	ug/L	P426398	
		Titanium	0.78	I	ug/L	P426398	
		Vanadium	2.0	U	ug/L	P426398	
		Zinc	5.0	U	ug/L	P426398	
	EPA 200.8 Rev. 5.4	Aluminum	54		ug/L	P426398	

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389858	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P426398	
		Arsenic	0.35		ug/L	P426398	
		Barium	5.38		ug/L	P426398	
		Beryllium	0.011	I	ug/L	P426398	
		Boron	27.0		ug/L	P426398	
		Cadmium	0.020	U	ug/L	P426398	
		Chromium	0.41	I	ug/L	P426398	
		Cobalt	0.040	I	ug/L	P426398	
		Copper	0.57	I	ug/L	P426398	
		Lead	0.20	U	ug/L	P426398	
		Manganese	10.6		ug/L	P426398	
		Molybdenum	0.16	I	ug/L	P426398	
		Nickel	0.50	U	ug/L	P426398	
		Selenium	0.20	U	ug/L	P426398	
		Silver	0.016	I	ug/L	P426398	
		Thallium	0.10	U	ug/L	P426398	
	SM 2340 B-2011	Hardness	68.8		mg/L	P426398	

Ref. Method and Comment:
EPA 8321B: Q - Sample was prepared beyond holding time for afidopyropen due to technical issues.

Sample Location: Lil Manatee River S Fork @ Stafford Rd

Collection Date/Time: 02/22/2023 12:30

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389857	EPA 8321B	2,4-D	0.0020	U	ug/L	P426469	
		Acesulfame K	0.10	U	ug/L	P426216	
		2,4,5-T	0.0040	U	ug/L	P426469	
		AMPA	0.12	I	ug/L	P426216	
		Acetaminophen	0.0080	U	ug/L	P426469	
		Acetamiprid	0.0020	U	ug/L	P426469	
		Endothall	0.25	U	ug/L	P426216	
		Glufosinate	0.10	U	ug/L	P426216	
		Glyphosate	0.10	U	ug/L	P426216	
		Afidopyropen	0.0020	UQ	ug/L	P426586	RPD
		Bentazon	0.0023	I	ug/L	P426469	
		Sucralose	0.023	I	ug/L	P426216	
		Benzovindiflupyr	0.0020	U	ug/L	P426469	
		Carbamazepine	8.0E-04	U	ug/L	P426469	
		Clothianidin	0.043		ug/L	P426469	
		Dinotefuran	0.0054	I	ug/L	P426469	
		Diuron	0.0020	U	ug/L	P426469	
		Fenuron	0.032	U	ug/L	P426469	
		Fluridone	8.0E-04	U	ug/L	P426469	
		Imazapyr	0.021		ug/L	P426469	
		Hydrocodone	0.0020	U	ug/L	P426469	
		Ibuprofen	0.080	U	ug/L	P426469	
		Imidacloprid	0.093		ug/L	P426469	
		Linuron	0.0040	U	ug/L	P426469	
		Mandestrobin	0.0020	U	ug/L	P426469	
		MCPP	0.0020	U	ug/L	P426469	
		Naproxen	0.0080	U	ug/L	P426469	
		Primidone	0.0040	U	ug/L	P426469	
		Pyraclostrobin	0.0020	U	ug/L	P426469	
		Silvex	0.0040	U	ug/L	P426469	
		Thiamethoxam	0.056		ug/L	P426469	
		Tolfenpyrad	0.0020	U	ug/L	P426469	
		Triclopyr	0.0040	U	ug/L	P426469	
2389859	EPA 200.7 Rev. 4.4	Calcium	26.8		mg/L	P426398	
		Iron	370		ug/L	P426398	
		Magnesium	12.4		mg/L	P426398	
		Potassium	4.5		mg/L	P426398	
		Sodium	7.7		mg/L	P426398	
		Strontium	1.12E+03		ug/L	P426398	
		Tin	3.0	U	ug/L	P426398	
		Titanium	2.0	I	ug/L	P426398	
		Vanadium	2.9	I	ug/L	P426398	
		Zinc	5.0	U	ug/L	P426398	
	EPA 200.8 Rev. 5.4	Aluminum	260		ug/L	P426398	

Field ID: G2SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389859	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P426398	
		Arsenic	0.28		ug/L	P426398	
		Barium	17.7		ug/L	P426398	
		Beryllium	0.031	I	ug/L	P426398	
		Boron	28.9		ug/L	P426398	
		Cadmium	0.103		ug/L	P426398	
		Chromium	0.52	I	ug/L	P426398	
		Cobalt	0.133		ug/L	P426398	
		Copper	1.76		ug/L	P426398	
		Lead	0.20	U	ug/L	P426398	
		Manganese	12.4		ug/L	P426398	
		Molybdenum	0.47	I	ug/L	P426398	
		Nickel	0.54	I	ug/L	P426398	
		Selenium	0.20	U	ug/L	P426398	
		Silver	0.010	U	ug/L	P426398	
		Thallium	0.10	U	ug/L	P426398	
	SM 2340 B-2011	Hardness	118		mg/L	P426398	

Ref. Method and Comment:
 EPA 8321B: Q - Sample was prepared beyond holding time for afidopyropen due to technical issues.
 EPA 200.8 Rev. 5.4: The cadmium result was confirmed in the undigested sample on 03/02/2023.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P426304

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P426305

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426310

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426398

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: P426398

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: P426868

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426872

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426544

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426844

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426581

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426453

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426306

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

Reference Method: EPA 8321B
Batch ID: P426216

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P426469

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
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: EPA 8321B

Batch ID: P426586

Component	Result	Code	Units
Afidopyropen	0.0020	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P426594

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

Reference Method: SM 2540 C-2015

Batch ID: P426803

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P426741

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P426788

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: P426304

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P426305

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: P426310

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426398

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	107		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Strontium	102		P	85 - 115
Tin	99.5		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426398

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.5		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	96.3		P	85 - 115
Barium	98.8		P	85 - 115
Beryllium	95.7		P	85 - 115
Boron	100		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	97.2		P	85 - 115
Cobalt	97.1		P	85 - 115
Copper	94.5		P	85 - 115
Lead	91.9		P	85 - 115
Manganese	95.6		P	85 - 115
Molybdenum	96.4		P	85 - 115
Nickel	97.6		P	85 - 115
Selenium	96.0		P	85 - 115
Silver	97.8		P	85 - 115
Thallium	96.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426868

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426872

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426544

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426453

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426306

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

Reference Method: EPA 8321B
Batch ID: P426216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	102		P	40 - 150
Endothall	117		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	104		P	40 - 150
Sucralose	108		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P426469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	40 - 150
2,4,5-T	91.9		P	40 - 150
Acetaminophen	113		P	30 - 150
Acetamiprid	88.1		P	40 - 150
Bentazon	122		P	30 - 150
Benzovindiflupyr	89.4		P	40 - 150
Carbamazepine	85.4		P	40 - 150
Clothianidin	87.3		P	40 - 150
Dinotefuran	108		P	40 - 150
Diuron	81.4		P	40 - 150
Fenuron	91.3		P	40 - 150
Fluridone	77.6		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	81.5		P	40 - 150
Imazapyr	98.5		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	74.9		P	40 - 150
Mandestrobin	85.5		P	40 - 150
MCPP	107		P	40 - 150
Naproxen	110		P	40 - 150
Primidone	91.8		P	40 - 150
Pyraclostrobin	81.1		P	40 - 150
Silvex	106		P	40 - 150
Thiamethoxam	97.0		P	40 - 150
Tolfenpyrad	58.8		P	30 - 150
Triclopyr	106		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P426586

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Afidopyropen	60.2		P	30 - 150

Reference Method: SM 2320 B-2011

Batch ID: P426594

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	94 - 106

Reference Method: SM 2540 C-2015

Batch ID: P426803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.0		P	90 - 110

Reference Method: SM 2540 D-2015

Batch ID: P426741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.9		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P426398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389778	Calcium	101		P	80 - 120
2389778	Iron	104	103	P/P	80 - 120
2389778	Magnesium	106	104	P/P	80 - 120
2389778	Potassium	98.0	96.9	P/P	80 - 120
2389778	Sodium	99.1	95.7	P/P	80 - 120
2389778	Strontium	99.5	98.0	P/P	80 - 120
2389778	Tin	99.0	97.7	P/P	80 - 120
2389778	Titanium	105	104	P/P	80 - 120
2389778	Vanadium	105	104	P/P	80 - 120
2389778	Zinc	102	99.9	P/P	80 - 120
2389975	Calcium	102		P	80 - 120
2389975	Iron	107		P	80 - 120
2389975	Magnesium	99.8		P	80 - 120
2389975	Potassium	100		P	80 - 120
2389975	Sodium	98.3		P	80 - 120
2389975	Strontium	103		P	80 - 120
2389975	Tin	103		P	80 - 120
2389975	Titanium	107		P	80 - 120
2389975	Vanadium	105		P	80 - 120
2389975	Zinc	107		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389778	Aluminum	92.8	95.4	P/P	80 - 120
2389778	Antimony	96.9	99.3	P/P	80 - 120
2389778	Arsenic	95.5	96.4	P/P	80 - 120
2389778	Barium	97.7	99.0	P/P	80 - 120
2389778	Beryllium	93.9	93.4	P/P	80 - 120
2389778	Boron	96.3	99.7	P/P	80 - 120
2389778	Cadmium	97.5	99.4	P/P	80 - 120
2389778	Chromium	99.4	100	P/P	80 - 120
2389778	Cobalt	94.0	95.1	P/P	80 - 120
2389778	Copper	94.4	94.8	P/P	80 - 120
2389778	Lead	90.3	92.0	P/P	80 - 120
2389778	Manganese	94.4	97.2	P/P	80 - 120
2389778	Molybdenum	97.8	101	P/P	80 - 120
2389778	Nickel	96.0	97.7	P/P	80 - 120
2389778	Selenium	93.8	96.2	P/P	80 - 120
2389778	Silver	96.3	98.1	P/P	80 - 120
2389778	Thallium	96.3	99.0	P/P	80 - 120
2389975	Aluminum	97.9		P	80 - 120
2389975	Antimony	99.9		P	80 - 120
2389975	Arsenic	97.1		P	80 - 120
2389975	Barium	99.3		P	80 - 120
2389975	Beryllium	94.4		P	80 - 120
2389975	Boron	103		P	80 - 120
2389975	Cadmium	99.8		P	80 - 120
2389975	Chromium	98.2		P	80 - 120
2389975	Cobalt	95.1		P	80 - 120
2389975	Copper	94.4		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389975	Lead	92.7		P	80 - 120
2389975	Manganese	98.4		P	80 - 120
2389975	Molybdenum	99.0		P	80 - 120
2389975	Nickel	96.0		P	80 - 120
2389975	Selenium	94.8		P	80 - 120
2389975	Silver	100		P	80 - 120
2389975	Thallium	97.8		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P426868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389770	Chloride	96.7		P	90 - 110
2389919	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P426872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389770	Sulfate	100		P	90 - 110
2389919	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P426544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389656	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P426844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390090	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P426581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389844	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P426453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389771	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P426306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389546	O-Phosphate-P	97.6	97.4	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P426216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389131	Acesulfame K	122	115	P/P	40 - 150
2389131	AMPA	73.1	67.5	P/P	40 - 150
2389131	Endothall	114	106	P/P	40 - 150
2389131	Glufosinate	76.6	79.4	P/P	40 - 150
2389131	Glyphosate	97.1	101	P/P	40 - 150
2389131	Sucralose	98.2	105	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2390647	2,4-D	97.0	110	P/P	40 - 150
2390647	2,4,5-T	98.0	98.3	P/P	40 - 150
2390647	Acetaminophen	114	118	P/P	30 - 150
2390647	Acetamiprid	53.6	59.2	P/P	40 - 150
2390647	Bentazon	78.7	78.8	P/P	30 - 150
2390647	Benzovindiflupyr	75.4	76.0	P/P	40 - 150
2390647	Carbamazepine	58.2	60.3	P/P	40 - 150
2390647	Clothianidin	77.9	81.3	P/P	40 - 150
2390647	Dinotefuran	95.9	96.1	P/P	40 - 150
2390647	Diuron	49.0	48.0	P/P	40 - 150
2390647	Fenuron	56.5	58.0	P/P	40 - 150
2390647	Fluridone	55.8	51.4	P/P	40 - 150
2390647	Hydrocodone	73.8	74.6	P/P	40 - 150
2390647	Ibuprofen	72.2	88.4	P/P	40 - 150
2390647	Imazapyr	98.9	106	P/P	40 - 150
2390647	Imidacloprid	101	106	P/P	40 - 150
2390647	Linuron	62.1	61.3	P/P	40 - 150
2390647	Mandestrobin	68.3	77.1	P/P	40 - 150
2390647	MCP	94.6	103	P/P	40 - 150
2390647	Naproxen	61.4	69.5	P/P	40 - 150
2390647	Primidone	78.9	79.3	P/P	40 - 150
2390647	Pyraclostrobin	70.8	71.2	P/P	40 - 150
2390647	Silvex	103	109	P/P	40 - 150
2390647	Thiamethoxam	84.1	81.4	P/P	40 - 150
2390647	Tolfenpyrad	52.6	51.0	P/P	30 - 150
2390647	Triclopyr	104	104	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2391073	Afidopyropen	73.1	39.7	P/P	30 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389872	Fluoride	99.9	99.3	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P426788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389629	Organic Carbon	94.5	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389691	Color (true)	2.09	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P426305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389843	Color (true)	2.65	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389694	Turbidity	2.37	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389778	Calcium	1.86	Spike	P	0 - 20
2389778	Iron	0.698	Spike	P	0 - 20
2389778	Magnesium	1.38	Spike	P	0 - 20
2389778	Potassium	1.02	Spike	P	0 - 20
2389778	Sodium	1.83	Spike	P	0 - 20
2389778	Strontium	1.50	Spike	P	0 - 20
2389778	Tin	1.35	Spike	P	0 - 20
2389778	Titanium	1.02	Spike	P	0 - 20
2389778	Vanadium	1.17	Spike	P	0 - 20
2389778	Zinc	1.66	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389778	Aluminum	2.76	Spike	P	0 - 20
2389778	Antimony	2.48	Spike	P	0 - 20
2389778	Arsenic	0.946	Spike	P	0 - 20
2389778	Barium	1.32	Spike	P	0 - 20
2389778	Beryllium	0.528	Spike	P	0 - 20
2389778	Boron	3.02	Spike	P	0 - 20
2389778	Cadmium	1.90	Spike	P	0 - 20
2389778	Chromium	0.781	Spike	P	0 - 20
2389778	Cobalt	1.16	Spike	P	0 - 20
2389778	Copper	0.442	Spike	P	0 - 20
2389778	Lead	1.92	Spike	P	0 - 20
2389778	Manganese	2.25	Spike	P	0 - 20
2389778	Molybdenum	2.87	Spike	P	0 - 20
2389778	Nickel	1.70	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389778	Selenium	2.44	Spike	P	0 - 20
2389778	Silver	1.91	Spike	P	0 - 20
2389778	Thallium	2.69	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389770	Chloride	0.255	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389770	Sulfate	1.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389656	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390090	Kjeldahl Nitrogen	2.37	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389844	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389771	Total-P	1.72	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P426306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389546	O-Phosphate-P	0.205	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P426216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389131	Acesulfame K	6.12	Spike	P	0 - 30
2389131	AMPA	7.93	Spike	P	0 - 30
2389131	Endothall	7.84	Spike	P	0 - 30
2389131	Glufosinate	3.56	Spike	P	0 - 30
2389131	Glyphosate	3.84	Spike	P	0 - 30
2389131	Sucralose	6.93	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P426469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2390647	2,4-D	12.5	Spike	P	0 - 30
2390647	2,4,5-T	0.264	Spike	P	0 - 30
2390647	Acetaminophen	3.77	Spike	P	0 - 30
2390647	Acetamiprid	9.88	Spike	P	0 - 30
2390647	Bentazon	0.234	Spike	P	0 - 30
2390647	Benzovindiflupyr	0.827	Spike	P	0 - 30
2390647	Carbamazepine	3.60	Spike	P	0 - 30
2390647	Clothianidin	4.19	Spike	P	0 - 30
2390647	Dinotefuran	0.234	Spike	P	0 - 30
2390647	Diuron	2.07	Spike	P	0 - 30
2390647	Fenuron	2.70	Spike	P	0 - 30
2390647	Fluridone	8.10	Spike	P	0 - 30
2390647	Hydrocodone	1.12	Spike	P	0 - 30
2390647	Ibuprofen	20.2	Spike	P	0 - 30
2390647	Imazapyr	6.28	Spike	P	0 - 30
2390647	Imidacloprid	5.33	Spike	P	0 - 30
2390647	Linuron	1.28	Spike	P	0 - 30
2390647	Mandestrobin	12.1	Spike	P	0 - 30
2390647	MCPP	8.21	Spike	P	0 - 30
2390647	Naproxen	12.4	Spike	P	0 - 30
2390647	Primidone	0.572	Spike	P	0 - 30
2390647	Pyraclostrobin	0.485	Spike	P	0 - 30
2390647	Silvex	4.93	Spike	P	0 - 30
2390647	Thiamethoxam	3.22	Spike	P	0 - 30
2390647	Tolfenpyrad	3.12	Spike	P	0 - 30
2390647	Triclopyr	0.455	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P426586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P426586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2391073	Afidopyropen	59.2	Spike	F	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P426594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389872	Total Alkalinity	0.146	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389842	TDS	5.79	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389872	Fluoride	0.482	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389629	Organic Carbon	0.996	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2389856

Field Sample ID: G2SW0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.2	P	30 - 160
EPA 8321B	Diuron-d6	61.7	P	30 - 160
EPA 8321B	Diuron-d6	62.3	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	105	P	30 - 160
EPA 8321B	Ibuprofen-d3	56.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.5	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Primidone-d5	90.5	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Lab Sample ID: 2389857

Field Sample ID: G2SW0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.7	P	30 - 160
EPA 8321B	Diuron-d6	56.6	P	30 - 160
EPA 8321B	Diuron-d6	54.4	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	95.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.3	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Primidone-d5	86.6	P	30 - 160
EPA 8321B	Sucralose-d6	91.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A117629

Included Lab Sample IDs: 2389842, 2389843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A117630

Included Lab Sample IDs: 2389846, 2389847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117632

Included Lab Sample IDs: 2389842, 2389843

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

Reference Method: EPA 8321B

Run ID: A117674

Included Lab Sample IDs: 2389856, 2389857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	97.9	P/P	60 - 160
Endothall	108	105	P/P	60 - 160
Glufosinate	93.9	93.6	P/P	60 - 160
Glyphosate	103	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A117677

Included Lab Sample IDs: 2389856, 2389857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	119	117	P/P	60 - 160
Sucralose	108	108	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117738

Included Lab Sample IDs: 2389844, 2389845

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117742

Included Lab Sample IDs: 2389858, 2389859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	103	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117742

Included Lab Sample IDs: 2389858, 2389859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	101	99.2	P/P	90 - 110
Strontium	99.4	99.4	P/P	90 - 110
Tin	98.8	99.5	P/P	90 - 110
Titanium	99.2	99.8	P/P	90 - 110
Vanadium	98.5	99.1	P/P	90 - 110
Zinc	98.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117755

Included Lab Sample IDs: 2389844, 2389845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	105	P/P	90 - 110
NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117757

Included Lab Sample IDs: 2389858, 2389859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.9	96.3	P/P	90 - 110
Antimony	95.5	96.3	P/P	90 - 110
Arsenic	94.0	94.8	P/P	90 - 110
Barium	95.9	95.6	P/P	90 - 110
Beryllium	93.8	93.0	P/P	90 - 110
Boron	96.9	98.5	P/P	90 - 110
Cadmium	95.7	96.6	P/P	90 - 110
Chromium	94.7	95.0	P/P	90 - 110
Cobalt	92.5	92.8	P/P	90 - 110
Copper	92.8	92.7	P/P	90 - 110
Lead	90.5	90.0	P/P	90 - 110
Manganese	95.1	95.6	P/P	90 - 110
Molybdenum	94.3	94.1	P/P	90 - 110
Nickel	93.5	93.7	P/P	90 - 110
Selenium	95.2	95.7	P/P	90 - 110
Silver	96.4	96.6	P/P	90 - 110
Thallium	97.5	96.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117758

Included Lab Sample IDs: 2389842, 2389843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	96.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117758

Included Lab Sample IDs: 2389842, 2389843

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117799

Included Lab Sample IDs: 2389844, 2389845

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117833

Included Lab Sample IDs: 2389842, 2389843

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.3	97.9	P/P	90 - 110
Chloride	97.9	98.5	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117844

Included Lab Sample IDs: 2389844, 2389845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117849

Included Lab Sample IDs: 2389856, 2389857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.1	96.1	P/P	50 - 150
2,4,5-T	82.1	99.8	P/P	50 - 150
Acetaminophen	116	126	P/P	60 - 160
Acetamiprid	99.0	99.0	P/P	50 - 150
Bentazon	121	113	P/P	50 - 160
Benzovindiflupyr	106	104	P/P	50 - 150
Carbamazepine	102	103	P/P	60 - 150
Clothianidin	93.6	100	P/P	60 - 150
Dinotefuran	112	114	P/P	50 - 150
Diuron	110	114	P/P	60 - 160
Fenuron	98.6	104	P/P	60 - 150
Fluridone	97.8	114	P/P	60 - 160
Hydrocodone	105	101	P/P	60 - 150
Ibuprofen	122	60.3	P/P	50 - 160
Imazapyr	98.3	94.8	P/P	50 - 150
Imidacloprid	98.3	94.5	P/P	60 - 150
Linuron	100	108	P/P	60 - 150
Mandestrobin	99.1	91.5	P/P	50 - 150
MCPP	99.7	103	P/P	50 - 150
Naproxen	95.7	127	P/P	50 - 160
Primidone	83.2	86.5	P/P	60 - 150
Pyraclostrobin	108	105	P/P	60 - 150
Silvex	92.8	88.5	P/P	50 - 150
Thiamethoxam	103	105	P/P	50 - 150
Tolfenpyrad	97.2	99.1	P/P	60 - 150
Triclopyr	103	90.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A117850

Included Lab Sample IDs: 2389856, 2389857

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Afidopyropen	112	96.3	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117939

Included Lab Sample IDs: 2389844, 2389845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	98.0	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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	101				2.09	
	Color (true)	101				2.65	
EPA 180.1 Rev. 2.0	Turbidity	101				2.37	
EPA 200.7 Rev. 4.4	Calcium	103	101	102			1.86
	Iron	107	104	103	107		0.698
	Magnesium	109	106	104	99.8		1.38
	Potassium	101	98.0	96.9	100		1.02
	Sodium	101	99.1	95.7	98.3		1.83
	Strontium	102	99.5	98.0	103		1.50
	Tin	99.5	99.0	97.7	103		1.35
	Titanium	103	105	104	107		1.02
	Vanadium	101	105	104	105		1.17
	Zinc	103	102	99.9	107		1.66
EPA 200.8 Rev. 5.4	Aluminum	97.5	92.8	95.4	97.9		2.76
	Antimony	96.8	96.9	99.3	99.9		2.48
	Arsenic	96.3	95.5	96.4	97.1		0.946
	Barium	98.8	97.7	99.0	99.3		1.32
	Beryllium	95.7	93.9	93.4	94.4		0.528
	Boron	100	96.3	99.7	103		3.02
	Cadmium	98.0	97.5	99.4	99.8		1.90
	Chromium	97.2	99.4	100	98.2		0.781
	Cobalt	97.1	94.0	95.1	95.1		1.16
	Copper	94.5	94.4	94.8	94.4		0.442
	Lead	91.9	90.3	92.0	92.7		1.92
	Manganese	95.6	98.4	94.4	97.2		2.25
	Molybdenum	96.4	97.8	101	99.0		2.87
	Nickel	97.6	96.0	97.7	96.0		1.70
	Selenium	96.0	93.8	96.2	94.8		2.44
	Silver	97.8	96.3	98.1	100		1.91
	Thallium	96.3	96.3	99.0	97.8		2.69
EPA 300.0 Rev. 2.1	Chloride	101	96.7	97.2		0.255	
	Sulfate	104	100	100		1.12	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101	101			0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.1	100	103			2.37
EPA 353.2 Rev. 2.0	NO2NO3-N	104	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	103	103	101			1.72
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	97.6	97.4			0.205
EPA 8321B	2,4-D	122	97.0	110			12.5
	2,4,5-T	91.9	98.0	98.3			0.264
	Acesulfame K	112	122	115			6.12
	Acetaminophen	113	114	118			3.77
	Acetamiprid	88.1	53.6	59.2			9.88
	Afidopyropen	60.2	73.1	39.7			59.2
	AMPA	102	73.1	67.5			7.93
	Bentazon	122	78.7	78.8			0.234
	Benzovindiflupyr	89.4	75.4	76.0			0.827
	Carbamazepine	85.4	58.2	60.3			3.60
	Clothianidin	87.3	77.9	81.3			4.19
	Dinotefuran	108	95.9	96.1			0.234
	Diuron	81.4	49.0	48.0			2.07
	Endothall	117	114	106			7.84
	Fenuron	91.3	56.5	58.0			2.70
	Fluridone	77.6	55.8	51.4			8.10
	Glufosinate	105	76.6	79.4			3.56

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Glyphosate	104	97.1	101		3.84
	Hydrocodone	86.6	73.8	74.6		1.12
	Ibuprofen	81.5	72.2	88.4		20.2
	Imazapyr	98.5	98.9	106		6.28
	Imidacloprid	104	101	106		5.33
	Linuron	74.9	62.1	61.3		1.28
	Mandestrobin	85.5	68.3	77.1		12.1
	MCP	107	94.6	103		8.21
	Naproxen	110	61.4	69.5		12.4
	Primidone	91.8	78.9	79.3		0.572
	Pyraclorobin	81.1	70.8	71.2		0.485
	Silvex	106	103	109		4.93
	Sucralose	108	98.2	105		6.93
	Thiamethoxam	97.0	84.1	81.4		3.22
	Tolfenpyrad	58.8	52.6	51.0		3.12
	Triclopyr	106	104	104		0.455
SM 2320 B-2011	Total Alkalinity	97.8			0.146	
SM 2540 C-2015	TDS	96.0			5.79	
SM 2540 D-2015	TSS	96.9				
SM 4500-F- C-2011	Fluoride	100	99.9	99.3		0.482
SM 5310 B-2011	Organic Carbon	94.1	94.5	95.9		0.996

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2389842, 2389843
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2389842, 2389843
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2389858, 2389859
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2389858, 2389859
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2389842, 2389843
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2389842, 2389843
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2389844, 2389845
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2389844, 2389845
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2389844, 2389845
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2389844, 2389845
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2389846, 2389847
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2389856, 2389857
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2389842, 2389843
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2389858, 2389859
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2389842, 2389843
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2389842, 2389843
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2389842, 2389843
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2389844, 2389845

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	02/23/2023			02/23/2023 14:26	Alexis Price	2389842
	02/23/2023			02/23/2023 14:29	Alexis Price	2389843
EPA 180.1 Rev. 2.0	02/23/2023			02/23/2023 15:08	Khloe J Berg	2389842
	02/23/2023			02/23/2023 15:09	Khloe J Berg	2389843
EPA 200.7 Rev. 4.4	02/23/2023	02/27/2023 10:40	Vijayalakshmi Reddy	03/01/2023 17:17	McKinley C Carter	2389858
	02/23/2023	02/27/2023 10:40	Vijayalakshmi Reddy	03/01/2023 17:25	McKinley C Carter	2389859
EPA 200.8 Rev. 5.4	02/23/2023	02/27/2023 10:40	Vijayalakshmi Reddy	03/01/2023 17:57	Conrad Hartmann	2389858
	02/23/2023	02/27/2023 10:40	Vijayalakshmi Reddy	03/01/2023 18:06	Conrad Hartmann	2389859
EPA 300.0 Rev. 2.1	02/23/2023			03/07/2023 15:16	Judith K. Clark	2389842
	02/23/2023			03/07/2023 16:01	Judith K. Clark	2389843
EPA 350.1 Rev. 2.0	02/23/2023			03/01/2023 11:49	Khloe J Berg	2389844
	02/23/2023			03/01/2023 11:51	Khloe J Berg	2389845
EPA 351.2 Rev. 2.0	02/23/2023	03/08/2023 14:00	Simonne.V. Calhoun	03/10/2023 16:57	Samantha L Bates	2389844
	02/23/2023	03/08/2023 14:00	Simonne.V. Calhoun	03/10/2023 16:58	Samantha L Bates	2389845
EPA 353.2 Rev. 2.0	02/23/2023			03/01/2023 10:01	Beverly Y. Sanders	2389844
	02/23/2023			03/01/2023 11:04	Beverly Y. Sanders	2389845
EPA 365.1 Rev. 2.0	02/23/2023	02/28/2023 17:21	Adam P Silver	03/04/2023 10:06	James L Waggeberby	2389844
	02/23/2023	02/28/2023 17:21	Adam P Silver	03/04/2023 10:07	James L Waggeberby	2389845
EPA 365.1 Rev. 2.0 dissolved	02/23/2023			02/23/2023 14:50	Elise M. Gillis	2389846
	02/23/2023			02/23/2023 14:52	Elise M. Gillis	2389847
EPA 8321B	02/23/2023	02/24/2023 10:00	Manjita Shrestha	02/24/2023 14:16	Manjita Shrestha	2389856
	02/23/2023	02/24/2023 10:00	Manjita Shrestha	02/24/2023 14:29	Manjita Shrestha	2389857
	02/23/2023	02/24/2023 10:00	Manjita Shrestha	02/24/2023 20:40	Manjita Shrestha	2389856
	02/23/2023	02/24/2023 10:00	Manjita Shrestha	02/24/2023 20:54	Manjita Shrestha	2389857
	02/23/2023	03/01/2023 09:00	Hoor Shaik	03/01/2023 18:43	Juyoung Kim	2389856
	02/23/2023	03/01/2023 09:00	Hoor Shaik	03/01/2023 19:01	Juyoung Kim	2389857
	02/23/2023	03/03/2023 09:00	Hoor Shaik	03/04/2023 01:11	Juyoung Kim	2389856
	02/23/2023	03/03/2023 09:00	Hoor Shaik	03/04/2023 01:30	Juyoung Kim	2389857
	02/23/2023			03/02/2023 01:29	Dale L. Simmons	2389842
	02/23/2023			03/02/2023 01:42	Dale L. Simmons	2389843
SM 2320 B-2011	02/23/2023			03/01/2023 17:17	McKinley C Carter	2389858
	02/23/2023			03/01/2023 17:25	McKinley C Carter	2389859
SM 2340 B-2011	02/23/2023			02/27/2023 16:17	Yijie Li	2389842, 2389843
	02/23/2023			02/27/2023 16:17	Yijie Li	2389842, 2389843
SM 2540 C-2015	02/23/2023			03/02/2023 01:29	Dale L. Simmons	2389842
SM 2540 D-2015	02/23/2023			03/02/2023 01:42	Dale L. Simmons	2389843
SM 4500-F- C-2011	02/23/2023			03/06/2023 20:47	Elise M. Gillis	2389844
	02/23/2023			03/06/2023 21:02	Elise M. Gillis	2389845
SM 5310 B-2011	02/23/2023					