

Chemical Analysis Report

SW-DIST-2022-09-13-02

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

Event Description: **2022 Run 6**
Request ID: **RQ-2022-08-22-03**
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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Certified by: Colin Wright, Program Administrator

Date Certified: 27-SEP-2022 08:52

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

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: Wildcat Creek N Branch@Scramble Dr

Collection Date/Time: 09/12/2022 11:15

Field ID: G2SW0112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355958	EPA 8321B	Acesulfame K	0.10	U	ug/L	P419485	
		2,4-D	0.12		ug/L	P419554	
		AMPA	1.5		ug/L	P419485	
		2,4,5-T	0.0040	U	ug/L	P419554	
		Acetaminophen	0.0080	U	ug/L	P419554	
		Acetamiprid	0.0020	U	ug/L	P419554	
		Endothall	0.25	UJ	ug/L	P419485	MS, SUR
		Glufosinate	0.10	U	ug/L	P419485	
		Glyphosate	3.1		ug/L	P419485	
		Afidopyropen	0.0020	U	ug/L	P419554	
		Sucralose	0.49		ug/L	P419485	
		Bentazon	8.0E-04	U	ug/L	P419554	
		Benzovindiflupyr	0.0020	U	ug/L	P419554	
		Carbamazepine	8.0E-04	U	ug/L	P419554	RPD
		Clothianidin	0.0020	U	ug/L	P419554	
		Dinotefuran	0.0020	U	ug/L	P419554	
		Diuron	0.0020	U	ug/L	P419554	
		Fenuron	0.032	U	ug/L	P419554	
		Fluridone	8.0E-04	U	ug/L	P419554	
		Imazapyr	0.023		ug/L	P419554	
		Hydrocodone	0.0020	U	ug/L	P419554	
		Ibuprofen	0.080	U	ug/L	P419554	MS
		Imidacloprid	0.0020	U	ug/L	P419554	
		Linuron	0.0040	U	ug/L	P419554	
		Mandestrobin	0.0020	U	ug/L	P419554	
		MCPP	0.0040	U	ug/L	P419554	
		Naproxen	0.0080	U	ug/L	P419554	
		Primidone	0.0040	U	ug/L	P419554	
		Pyraclostrobin	0.0020	U	ug/L	P419554	
		Silvex	0.0040	U	ug/L	P419554	
		Thiamethoxam	0.0020	U	ug/L	P419554	
		Tolfenpyrad	0.0020	U	ug/L	P419554	
		Triclopyr	0.0040	U	ug/L	P419554	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Wildcat Creek S Branch@Stephens Rd

Collection Date/Time: 09/12/2022 11:40

Field ID: G2SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355943	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P419499	
	SM 2320 B-2011	Total Alkalinity	64		mg CaCO3/L	P419768	
	SM 2540 D-2011	TSS	4	I	mg/L	P419821	
	SM 4500-F- C-2011	Fluoride	0.22		mg F/L	P419772	
2355944	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P419722	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P419588	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.39		mg N/L	P419706	
	EPA 365.1 Rev. 2.0	Total-P	0.68		mg P/L	P419599	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P419713	
2355945	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.58		mg P/L	P419502	

Ref. Method and Comment:

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

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

Sample Location: Wildcat Creek S Branch@Stephens Rd

Collection Date/Time: 09/12/2022 11:40

Field ID: G2SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355959	EPA 8321B	2,4-D	0.40		ug/L	P419554	
		Acesulfame K	0.10	U	ug/L	P419485	
		2,4,5-T	0.0040	U	ug/L	P419554	
		AMPA	0.86		ug/L	P419485	
		Acetaminophen	0.0080	U	ug/L	P419554	
		Acetamiprid	0.0020	U	ug/L	P419554	
		Endothall	0.25	U	ug/L	P419485	MS
		Glufosinate	0.10	U	ug/L	P419485	
		Glyphosate	1.9		ug/L	P419485	
		Afidopyropen	0.0020	U	ug/L	P419554	
		Bentazon	8.0E-04	U	ug/L	P419554	
		Sucralose	0.011	I	ug/L	P419485	
		Benzovindiflupyr	0.0020	U	ug/L	P419554	
		Carbamazepine	8.0E-04	U	ug/L	P419554	RPD
		Clothianidin	0.082		ug/L	P419554	
		Dinotefuran	0.0032	I	ug/L	P419554	
		Diuron	0.0020	U	ug/L	P419554	
		Fenuron	0.032	U	ug/L	P419554	
		Fluridone	8.0E-04	U	ug/L	P419554	
		Imazapyr	0.0040	U	ug/L	P419554	
		Hydrocodone	0.0020	U	ug/L	P419554	
		Ibuprofen	0.080	U	ug/L	P419554	MS
		Imidacloprid	0.066		ug/L	P419554	
		Linuron	0.0040	U	ug/L	P419554	
		Mandestrobin	0.0020	U	ug/L	P419554	
		MCPP	0.0040	U	ug/L	P419554	
		Naproxen	0.0080	U	ug/L	P419554	
		Primidone	0.0042	I	ug/L	P419554	
		Pyraclostrobin	0.0020	U	ug/L	P419554	
		Silvex	0.0040	U	ug/L	P419554	
		Thiamethoxam	0.11		ug/L	P419554	
		Tolfenpyrad	0.0020	U	ug/L	P419554	
		Triclopyr	0.0040	U	ug/L	P419554	

Sample Location: McMullen Creek @ Marina

Collection Date/Time: 09/12/2022 12:20

Field ID: G1SW0120

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355940	DEP SOP: NU-094-1	Color (true)	140		PCU	P419508	
	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P419499	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P419776	
		Sulfate	44		mg SO4/L	P419780	
	SM 2320 B-2011	Total Alkalinity	88		mg CaCO3/L	P419768	
	SM 2540 C-2011	TDS	401		mg/L	P419799	
	SM 2540 D-2011	TSS	11		mg/L	P419817	
	SM 4500-F- C-2011	Fluoride	0.27		mg F/L	P419772	
2355941	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P419721	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P419589	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P419706	
	EPA 365.1 Rev. 2.0	Total-P	0.77		mg P/L	P419599	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P419713	
2355942	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.59		mg P/L	P419502	
2355960	EPA 200.7 Rev. 4.4	Calcium	34.1		mg/L	P419590	
		Iron	280		ug/L	P419590	
		Magnesium	17.7		mg/L	P419590	
		Potassium	6.7		mg/L	P419590	
		Sodium	79.9		mg/L	P419590	
		Strontium	528		ug/L	P419590	
		Tin	4.1	I	ug/L	P419590	
	EPA 200.8 Rev. 5.4	Titanium	3.4		ug/L	P419590	
		Vanadium	2.0	U	ug/L	P419590	
		Zinc	6.9	I	ug/L	P419590	
		Aluminum	296		ug/L	P419590	
		Antimony	0.17	I	ug/L	P419590	
		Arsenic	4.61		ug/L	P419590	
		Barium	9.68		ug/L	P419590	
		Beryllium	0.028	I	ug/L	P419590	
		Boron	72.4		ug/L	P419590	
		Cadmium	0.037	I	ug/L	P419590	
		Chromium	1.4	I	ug/L	P419590	
		Cobalt	0.098		ug/L	P419590	
		Copper	4.71		ug/L	P419590	
		Lead	0.69		ug/L	P419590	
		Manganese	13.1		ug/L	P419590	
		Molybdenum	1.43		ug/L	P419590	
		Nickel	0.75	I	ug/L	P419590	
		Selenium	0.20	U	ug/L	P419590	
		Silver	0.010	I	ug/L	P419590	
		Thallium	0.10	U	ug/L	P419590	

Ref. Method and Comment:

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

Sample Location: McMullen Creek @ 28th Ave

Collection Date/Time: 09/12/2022 12:40

Field ID: G1SW0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2355961	EPA 200.7 Rev. 4.4	Calcium	38.0		mg/L	P419590	
		Iron	280		ug/L	P419590	
		Magnesium	12.3		mg/L	P419590	
		Potassium	4.7		mg/L	P419590	
		Sodium	10.9		mg/L	P419590	
		Strontium	470		ug/L	P419590	
		Tin	5.1	I	ug/L	P419590	
		Titanium	4.4		ug/L	P419590	
		Vanadium	2.0	U	ug/L	P419590	
		Zinc	6.7	I	ug/L	P419590	
	EPA 200.8 Rev. 5.4	Aluminum	223		ug/L	P419590	
		Antimony	0.21		ug/L	P419590	
		Arsenic	4.91		ug/L	P419590	
		Barium	13.3		ug/L	P419590	
		Beryllium	0.023	I	ug/L	P419590	
		Boron	35.1		ug/L	P419590	
		Cadmium	0.025	I	ug/L	P419590	
		Chromium	1.2	I	ug/L	P419590	
		Cobalt	0.106		ug/L	P419590	
		Copper	4.44		ug/L	P419590	
		Lead	0.40	I	ug/L	P419590	
		Manganese	19.0		ug/L	P419590	
		Molybdenum	1.55		ug/L	P419590	
		Nickel	0.78	I	ug/L	P419590	
		Selenium	0.27	I	ug/L	P419590	
		Silver	0.010	U	ug/L	P419590	
		Thallium	0.10	U	ug/L	P419590	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P419508

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419499

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419590

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: P419590

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419722

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419588

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419589

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419706

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419599

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419502

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

Reference Method: EPA 8321B
Batch ID: P419485

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: P419485

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

Reference Method: EPA 8321B
Batch ID: P419554

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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P419768

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

Reference Method: SM 2540 C-2011
Batch ID: P419799

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419817

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P419821

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419713

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: P419508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419499

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	104		P	85 - 115
Sodium	104		P	85 - 115
Strontium	102		P	85 - 115
Tin	104		P	85 - 115
Titanium	99.3		P	85 - 115
Vanadium	98.5		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	105		P	85 - 115
Barium	104		P	85 - 115
Beryllium	97.1		P	85 - 115
Boron	105		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	100		P	85 - 115
Copper	104		P	85 - 115
Lead	93.4		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	104		P	85 - 115
Selenium	102		P	85 - 115
Silver	88.1		P	85 - 115
Thallium	99.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419722

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419588

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419589

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419706

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419599

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P419485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	106		P	40 - 150
Endothall	115		P	40 - 150
Glufosinate	107		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P419485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	105		P	40 - 150
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P419554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.1		P	40 - 150
2,4,5-T	77.0		P	40 - 150
Acetaminophen	123		P	30 - 150
Acetamiprid	81.0		P	40 - 150
Afidopyropen	146		P	30 - 150
Bentazon	110		P	30 - 150
Benzovindiflupyr	99.7		P	40 - 150
Carbamazepine	78.6		P	40 - 150
Clothianidin	105		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	99.0		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	113		P	40 - 150
Hydrocodone	103		P	40 - 150
Ibuprofen	41.9		P	40 - 150
Imazapyr	93.1		P	40 - 150
Imidacloprid	110		P	40 - 150
Linuron	89.5		P	40 - 150
Mandestrobin	121		P	40 - 150
MCPP	76.2		P	40 - 150
Naproxen	59.1		P	40 - 150
Primidone	73.2		P	40 - 150
Pyraclostrobin	89.9		P	40 - 150
Silvex	70.6		P	40 - 150
Thiamethoxam	82.0		P	40 - 150
Tolfenpyrad	55.1		P	30 - 150
Triclopyr	72.2		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P419768

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

Reference Method: SM 4500-F- C-2011

Batch ID: P419772

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

Reference Method: SM 5310 B-2011

Batch ID: P419713

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P419590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2356076	Calcium	104	106	P/P	80 - 120
2356076	Iron	104	106	P/P	80 - 120
2356076	Magnesium	104	105	P/P	80 - 120
2356076	Potassium	104	106	P/P	80 - 120
2356076	Sodium	99.8	101	P/P	80 - 120
2356076	Strontium	101	102	P/P	80 - 120
2356076	Tin	104	106	P/P	80 - 120
2356076	Titanium	101	102	P/P	80 - 120
2356076	Vanadium	99.8	101	P/P	80 - 120
2356076	Zinc	103	104	P/P	80 - 120
2356077	Calcium	106		P	80 - 120
2356077	Iron	107		P	80 - 120
2356077	Magnesium	105		P	80 - 120
2356077	Potassium	106		P	80 - 120
2356077	Sodium	102		P	80 - 120
2356077	Strontium	102		P	80 - 120
2356077	Tin	102		P	80 - 120
2356077	Titanium	101		P	80 - 120
2356077	Vanadium	99.1		P	80 - 120
2356077	Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P419590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2356076	Aluminum	99.4	102	P/P	80 - 120
2356076	Antimony	102	105	P/P	80 - 120
2356076	Arsenic	103	107	P/P	80 - 120
2356076	Barium	103	105	P/P	80 - 120
2356076	Beryllium	96.6	98.6	P/P	80 - 120
2356076	Boron	104	106	P/P	80 - 120
2356076	Cadmium	98.6	103	P/P	80 - 120
2356076	Chromium	99.7	103	P/P	80 - 120
2356076	Cobalt	97.8	102	P/P	80 - 120
2356076	Copper	104	107	P/P	80 - 120
2356076	Lead	93.4	96.9	P/P	80 - 120
2356076	Manganese	98.6	104	P/P	80 - 120
2356076	Molybdenum	98.6	103	P/P	80 - 120
2356076	Nickel	102	106	P/P	80 - 120
2356076	Selenium	98.8	103	P/P	80 - 120
2356076	Silver	85.4	88.3	P/P	80 - 120
2356076	Thallium	99.7	104	P/P	80 - 120
2356077	Aluminum	101		P	80 - 120
2356077	Antimony	102		P	80 - 120
2356077	Arsenic	103		P	80 - 120
2356077	Barium	103		P	80 - 120
2356077	Beryllium	98.1		P	80 - 120
2356077	Boron	107		P	80 - 120
2356077	Cadmium	98.2		P	80 - 120
2356077	Chromium	101		P	80 - 120
2356077	Cobalt	97.7		P	80 - 120
2356077	Copper	103		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2356077	Lead	94.1		P	80 - 120
2356077	Manganese	101		P	80 - 120
2356077	Molybdenum	100		P	80 - 120
2356077	Nickel	100		P	80 - 120
2356077	Selenium	100		P	80 - 120
2356077	Silver	85.5		P	80 - 120
2356077	Thallium	99.6		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355806	Chloride	101		P	90 - 110
2355851	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355806	Sulfate	99.6		P	90 - 110
2355851	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355778	Ammonia-N	99.2	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355860	Ammonia-N	91.0	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355860	Kjeldahl Nitrogen	100	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355860	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355980	Total-P	108	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355981	O-Phosphate-P	98.8	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P419485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355958	Acesulfame K	88.7	87.5	P/P	40 - 150
2355958	AMPA	85.8	82.1	P/P	40 - 150
2355958	Endothall	188	189	F/F	40 - 150
2355958	Glufosinate	73.2	82.9	P/P	40 - 150
2355958	Glyphosate	105	126	P/P	40 - 150
2355958	Sucralose	102	100	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P419554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355835	2,4-D	82.0	77.7	P/P	40 - 150
2355835	2,4,5-T	83.7	79.1	P/P	40 - 150
2355835	Acetaminophen	76.1	77.5	P/P	30 - 150
2355835	Acetamiprid	55.7	74.2	P/P	40 - 150
2355835	Afidopyrophen	105	134	P/P	30 - 150
2355835	Bentazon	113	102	P/P	30 - 150
2355835	Benzovindiflupyr	84.9	78.7	P/P	40 - 150
2355835	Carbamazepine	44.0	83.7	P/P	40 - 150
2355835	Clothianidin	62.7	56.0	P/P	40 - 150
2355835	Dinotefuran	91.9	93.9	P/P	40 - 150
2355835	Diuron	86.4	89.8	P/P	40 - 150
2355835	Fenuron	114	112	P/P	40 - 150
2355835	Fluridone	85.2	85.9	P/P	40 - 150
2355835	Hydrocodone	118	128	P/P	40 - 150
2355835	Ibuprofen	36.3	43.9	F/P	40 - 150
2355835	Imazapyr	82.8	84.6	P/P	40 - 150
2355835	Imidacloprid	76.6	76.8	P/P	40 - 150
2355835	Linuron	86.1	90.1	P/P	40 - 150
2355835	Mandestrobin	100	107	P/P	40 - 150
2355835	MCPP	91.3	93.3	P/P	40 - 150
2355835	Naproxen	66.3	60.5	P/P	40 - 150
2355835	Primidone	59.8	46.5	P/P	40 - 150
2355835	Pyraclostrobin	79.9	84.5	P/P	40 - 150
2355835	Silvex	84.6	74.5	P/P	40 - 150
2355835	Thiamethoxam	71.7	84.8	P/P	40 - 150
2355835	Tolfenpyrad	40.3	42.8	P/P	30 - 150
2355835	Triclopyr	74.2	75.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355843	Fluoride	98.2	98.2	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P419713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355980	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419508

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355982	Color (true)	1.53	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419499

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355855	Turbidity	1.82	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419590

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2356076	Calcium	1.11	Spike	P	0 - 20
2356076	Iron	1.06	Spike	P	0 - 20
2356076	Magnesium	0.862	Spike	P	0 - 20
2356076	Potassium	1.50	Spike	P	0 - 20
2356076	Sodium	0.949	Spike	P	0 - 20
2356076	Strontium	1.35	Spike	P	0 - 20
2356076	Tin	1.50	Spike	P	0 - 20
2356076	Titanium	0.396	Spike	P	0 - 20
2356076	Vanadium	1.25	Spike	P	0 - 20
2356076	Zinc	0.926	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419590

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2356076	Aluminum	2.85	Spike	P	0 - 20
2356076	Antimony	2.76	Spike	P	0 - 20
2356076	Arsenic	3.80	Spike	P	0 - 20
2356076	Barium	2.34	Spike	P	0 - 20
2356076	Beryllium	2.01	Spike	P	0 - 20
2356076	Boron	2.16	Spike	P	0 - 20
2356076	Cadmium	4.50	Spike	P	0 - 20
2356076	Chromium	3.58	Spike	P	0 - 20
2356076	Cobalt	4.31	Spike	P	0 - 20
2356076	Copper	3.21	Spike	P	0 - 20
2356076	Lead	3.61	Spike	P	0 - 20
2356076	Manganese	3.89	Spike	P	0 - 20
2356076	Molybdenum	4.08	Spike	P	0 - 20
2356076	Nickel	3.68	Spike	P	0 - 20
2356076	Selenium	4.24	Spike	P	0 - 20
2356076	Silver	3.44	Spike	P	0 - 20
2356076	Thallium	4.02	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355851	Chloride	0.0367	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P419780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355851	Sulfate	0.238	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355778	Ammonia-N	0.698	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355860	Ammonia-N	3.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2356048	Kjeldahl Nitrogen	0.604	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355860	Kjeldahl Nitrogen	2.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355860	NO2NO3-N	0.274	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355980	Total-P	2.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355981	O-Phosphate-P	3.08	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P419485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355958	Acesulfame K	1.43	Spike	P	0 - 30
2355958	AMPA	2.59	Spike	P	0 - 30
2355958	Endothall	0.272	Spike	P	0 - 30
2355958	Glufosinate	12.5	Spike	P	0 - 30
2355958	Glyphosate	8.83	Spike	P	0 - 30
2355958	Sucralose	1.46	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P419554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355835	2,4-D	5.09	Spike	P	0 - 30
2355835	2,4,5-T	5.71	Spike	P	0 - 30
2355835	Acetaminophen	1.90	Spike	P	0 - 30
2355835	Acetamiprid	28.4	Spike	P	0 - 30
2355835	Afidopyropen	24.2	Spike	P	0 - 30
2355835	Bentazon	8.88	Spike	P	0 - 30
2355835	Benzovindiflupyr	7.60	Spike	P	0 - 30
2355835	Carbamazepine	62.3	Spike	F	0 - 30
2355835	Clothianidin	11.2	Spike	P	0 - 30
2355835	Dinotefuran	2.14	Spike	P	0 - 30
2355835	Diuron	3.89	Spike	P	0 - 30
2355835	Fenuron	1.01	Spike	P	0 - 30
2355835	Fluridone	0.763	Spike	P	0 - 30
2355835	Hydrocodone	8.05	Spike	P	0 - 30
2355835	Ibuprofen	18.8	Spike	P	0 - 30
2355835	Imazapyr	2.03	Spike	P	0 - 30
2355835	Imidacloprid	0.363	Spike	P	0 - 30
2355835	Linuron	4.55	Spike	P	0 - 30
2355835	Mandestrobin	6.16	Spike	P	0 - 30
2355835	MCPP	2.18	Spike	P	0 - 30
2355835	Naproxen	9.18	Spike	P	0 - 30
2355835	Primidone	25.1	Spike	P	0 - 30
2355835	Pyraclostrobin	5.69	Spike	P	0 - 30
2355835	Silvex	12.7	Spike	P	0 - 30
2355835	Thiamethoxam	16.6	Spike	P	0 - 30
2355835	Tolfenpyrad	5.97	Spike	P	0 - 30
2355835	Triclopyr	1.85	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P419768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355843	Total Alkalinity	0.566	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P419799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355474	TDS	2.74	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P419772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355843	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355980	Organic Carbon	1.48	Sample	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2355958

Field Sample ID: G2SW0112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	135	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.1	P	30 - 160
EPA 8321B	Diuron-d6	52.9	P	30 - 160
EPA 8321B	Endothall-d6	199	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.5	P	30 - 160
EPA 8321B	Primidone-d5	71.3	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Lab Sample ID: 2355959

Field Sample ID: G2SW0102

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.1	P	30 - 160
EPA 8321B	Diuron-d6	52.2	P	30 - 160
EPA 8321B	Endothall-d6	80.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.0	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114694

Included Lab Sample IDs: 2355940, 2355943

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A114695

Included Lab Sample IDs: 2355942, 2355945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.6	96.7	P/P	90 - 110
O-Phosphate-P	98.7	99.6	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A114696

Included Lab Sample IDs: 2355940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114761

Included Lab Sample IDs: 2355941, 2355944

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A114764

Included Lab Sample IDs: 2355960, 2355961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.3	99.2	P/P	90 - 110
Antimony	98.8	97.8	P/P	90 - 110
Arsenic	105	103	P/P	90 - 110
Barium	98.9	97.0	P/P	90 - 110
Beryllium	98.9	96.8	P/P	90 - 110
Boron	99.2	99.6	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	103	102	P/P	90 - 110
Cobalt	100	99.1	P/P	90 - 110
Copper	106	103	P/P	90 - 110
Lead	90.9	90.3	P/P	90 - 110
Manganese	101	102	P/P	90 - 110
Molybdenum	99.1	98.1	P/P	90 - 110
Nickel	104	102	P/P	90 - 110
Selenium	103	101	P/P	90 - 110
Silver	98.1	97.1	P/P	90 - 110
Thallium	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114771

Included Lab Sample IDs: 2355960, 2355961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	103	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	99.9	99.5	P/P	90 - 110
Sodium	99.9	100	P/P	90 - 110
Strontium	98.7	98.9	P/P	90 - 110
Tin	102	100	P/P	90 - 110
Titanium	98.4	96.9	P/P	90 - 110
Vanadium	97.7	97.7	P/P	90 - 110
Zinc	101	98.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A114773

Included Lab Sample IDs: 2355958, 2355959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	112	114	P/P	60 - 160
Sucralose	104	105	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114777

Included Lab Sample IDs: 2355941, 2355944

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

Reference Method: SM 5310 B-2011

Run ID: A114782

Included Lab Sample IDs: 2355941, 2355944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	97.9	P/P	90 - 110
Organic Carbon	97.9	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114783

Included Lab Sample IDs: 2355941, 2355944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.4	P/P	90 - 110
Ammonia-N	99.9	98.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114789

Included Lab Sample IDs: 2355940

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114800

Included Lab Sample IDs: 2355941, 2355944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.8	P/P	90 - 110
Kjeldahl Nitrogen	98.4	98.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114801

Included Lab Sample IDs: 2355940, 2355943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114801

Included Lab Sample IDs: 2355940, 2355943

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

Reference Method: EPA 8321B

Run ID: A114835

Included Lab Sample IDs: 2355958, 2355959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.1	88.5	P/P	50 - 150
2,4,5-T	104	106	P/P	50 - 150
Acetaminophen	101	93.6	P/P	60 - 160
Acetamiprid	119	127	P/P	50 - 150
Afidopyropen	91.0	114	P/P	50 - 150
Bentazon	113	109	P/P	50 - 160
Benzovindiflupyr	101	107	P/P	50 - 150
Carbamazepine	109	115	P/P	60 - 150
Clothianidin	83.2	93.3	P/P	60 - 150
Dinotefuran	108	111	P/P	50 - 150
Diuron	110	100	P/P	60 - 160
Fenuron	104	106	P/P	60 - 150
Fluridone	112	113	P/P	60 - 160
Hydrocodone	104	103	P/P	60 - 150
Ibuprofen	63.7	106	P/P	50 - 160
Imazapyr	93.8	94.3	P/P	50 - 150
Imidacloprid	110	110	P/P	60 - 150
Linuron	108	109	P/P	60 - 150
Mandestrobin	109	109	P/P	50 - 150
MCPP	98.9	103	P/P	50 - 150
Naproxen	138	77.3	P/P	50 - 160
Primidone	81.4	92.7	P/P	60 - 150
Pyraclostrobin	110	111	P/P	60 - 150
Silvex	99.5	107	P/P	50 - 150
Thiamethoxam	111	111	P/P	50 - 150
Tolfenpyrad	105	114	P/P	60 - 150
Triclopyr	91.9	97.1	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A114851

Included Lab Sample IDs: 2355958, 2355959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	109	P/P	60 - 160
Endothall	112	92.2	P/P	60 - 160
Glufosinate	91.0	83.6	P/P	60 - 160
Glyphosate	112	117	P/P	60 - 160

* 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)	99.8					1.53	
EPA 180.1 Rev. 2.0	Turbidity	101					1.82	
EPA 200.7 Rev. 4.4	Calcium	105	104	106	106			1.11
	Iron	105	104	106	107			1.06
	Magnesium	104	104	105	105			0.862
	Potassium	104	104	106	106			1.50
	Sodium	104	99.8	101	102			0.949
	Strontium	102	101	102	102			1.35
	Tin	104	104	106	102			1.50
	Titanium	99.3	101	102	101			0.396
	Vanadium	98.5	99.8	101	99.1			1.25
	Zinc	100	103	104	102			0.926
EPA 200.8 Rev. 5.4	Aluminum	101	99.4	102	101			2.85
	Antimony	102	102	105	102			2.76
	Arsenic	105	103	107	103			3.80
	Barium	104	103	105	103			2.34
	Beryllium	97.1	96.6	98.6	98.1			2.01
	Boron	105	104	106	107			2.16
	Cadmium	98.9	98.6	103	98.2			4.50
	Chromium	101	99.7	103	101			3.58
	Cobalt	100	97.8	102	97.7			4.31
	Copper	104	104	107	103			3.21
	Lead	93.4	93.4	96.9	94.1			3.61
	Manganese	100	98.6	104	101			3.89
	Molybdenum	100	98.6	103	100			4.08
	Nickel	104	102	106	100			3.68
	Selenium	102	98.8	103	100			4.24
	Silver	88.1	85.4	88.3	85.5			3.44
	Thallium	99.7	99.7	104	99.6			4.02
EPA 300.0 Rev. 2.1	Chloride	102	100	101			0.0367	
	Sulfate	102	100	99.6			0.238	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	99.2	100				0.698
	Ammonia-N	97.8	91.0	95.2				3.57
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108						0.604
	Kjeldahl Nitrogen	101	100	96.1				2.76
EPA 353.2 Rev. 2.0	NO2NO3-N	101	97.5	98.0				0.274
EPA 365.1 Rev. 2.0	Total-P	106	108	105				2.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.8	98.8	95.8				3.08
EPA 8321B	2,4-D	88.1	82.0	77.7				5.09
	2,4,5-T	77.0	83.7	79.1				5.71
	Acesulfame K	115	88.7	87.5				1.43
	Acetaminophen	123	76.1	77.5				1.90
	Acetamiprid	81.0	55.7	74.2				28.4
	Afidopyropen	146	105	134				24.2
	AMPA	106	85.8	82.1				2.59
	Bentazon	110	113	102				8.88
	Benzovindiflupyr	99.7	84.9	78.7				7.60
	Carbamazepine	78.6	44.0	83.7				62.3
	Clothianidin	105	62.7	56.0				11.2
	Dinotefuran	101	91.9	93.9				2.14
	Diuron	99.0	86.4	89.8				3.89
	Endothall	115	188	189				0.272
	Fenuron	107	114	112				1.01
	Fluridone	113	85.2	85.9				0.763

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Glufosinate	107	73.2	82.9		12.5
	Glyphosate	105	105	126		8.83
	Hydrocodone	103	118	128		8.05
	Ibuprofen	41.9	36.3	43.9		18.8
	Imazapyr	93.1	82.8	84.6		2.03
	Imidacloprid	110	76.6	76.8		0.363
	Linuron	89.5	86.1	90.1		4.55
	Mandestrobin	121	100	107		6.16
	MCPP	76.2	91.3	93.3		2.18
	Naproxen	59.1	66.3	60.5		9.18
	Primidone	73.2	59.8	46.5		25.1
	Pyraclostrobin	89.9	79.9	84.5		5.69
	Silvex	70.6	84.6	74.5		12.7
	Sucralose	106	102	100		1.46
	Thiamethoxam	82.0	71.7	84.8		16.6
	Tolfenpyrad	55.1	40.3	42.8		5.97
	Triclopyr	72.2	74.2	75.6		1.85
SM 2320 B-2011	Total Alkalinity	101				0.566
SM 2540 C-2011	TDS					2.74
SM 4500-F- C-2011	Fluoride	100	98.2	98.2		0.0
SM 5310 B-2011	Organic Carbon	97.2	102			1.48

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2355940
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2355940, 2355943
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2355960, 2355961
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2355960, 2355961
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2355940
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2355940
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2355941, 2355944
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2355941, 2355944
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2355941, 2355944
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2355941, 2355944
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2355942, 2355945
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2355958, 2355959
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2355940, 2355943
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2355940
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2355940, 2355943
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2355940, 2355943
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2355941, 2355944

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	09/13/2022			09/13/2022 16:25	Anna M. Plaviak	2355940
EPA 180.1 Rev. 2.0	09/13/2022			09/13/2022 14:25	Chandler E Cox	2355940, 2355943
EPA 200.7 Rev. 4.4	09/13/2022	09/15/2022 10:20	Megan Whitefoot	09/16/2022 02:06	McKinley C Carter	2355960
	09/13/2022	09/15/2022 10:20	Megan Whitefoot	09/16/2022 02:14	McKinley C Carter	2355961
EPA 200.8 Rev. 5.4	09/13/2022	09/15/2022 10:20	Megan Whitefoot	09/15/2022 18:21	Emily M Philpot	2355960
	09/13/2022	09/15/2022 10:20	Megan Whitefoot	09/15/2022 18:31	Emily M Philpot	2355961
EPA 300.0 Rev. 2.1	09/13/2022			09/17/2022 11:44	Anna M. Plaviak	2355940
EPA 350.1 Rev. 2.0	09/13/2022			09/16/2022 10:43	Judith K. Clark	2355941
	09/13/2022			09/16/2022 11:04	Judith K. Clark	2355944
EPA 351.2 Rev. 2.0	09/13/2022	09/15/2022 13:58	Alexandra J Mattheus	09/16/2022 14:58	Alexandra J Mattheus	2355944
	09/13/2022	09/15/2022 13:58	Alexandra J Mattheus	09/16/2022 15:29	Alexandra J Mattheus	2355941
EPA 353.2 Rev. 2.0	09/13/2022			09/15/2022 14:13	Judith K. Clark	2355941
	09/13/2022			09/15/2022 14:14	Judith K. Clark	2355944
EPA 365.1 Rev. 2.0	09/13/2022	09/15/2022 15:47	Adam P Silver	09/15/2022 20:46	James L Waggeberby	2355941
	09/13/2022	09/15/2022 15:47	Adam P Silver	09/15/2022 20:47	James L Waggeberby	2355944
EPA 365.1 Rev. 2.0 dissolved	09/13/2022			09/13/2022 16:01	Elise M. Gillis	2355942
	09/13/2022			09/13/2022 16:54	Elise M. Gillis	2355945
EPA 8321B	09/13/2022	09/15/2022 09:00	June Rhew	09/21/2022 00:16	Juyoung Kim	2355958
	09/13/2022	09/15/2022 09:00	June Rhew	09/21/2022 00:37	Juyoung Kim	2355959
	09/13/2022	09/15/2022 13:00	Umesh Chiluwal	09/16/2022 01:08	Umesh Chiluwal	2355958
	09/13/2022	09/15/2022 13:00	Umesh Chiluwal	09/16/2022 02:08	Umesh Chiluwal	2355959
	09/13/2022	09/15/2022 13:00	Umesh Chiluwal	09/16/2022 20:33	Umesh Chiluwal	2355958
	09/13/2022	09/15/2022 13:00	Umesh Chiluwal	09/16/2022 20:59	Umesh Chiluwal	2355959
SM 2320 B-2011	09/13/2022			09/17/2022 09:17	Dale L. Simmons	2355940
	09/13/2022			09/17/2022 09:29	Dale L. Simmons	2355943
SM 2540 C-2011	09/13/2022			09/14/2022 15:45	Yijie Li	2355940
SM 2540 D-2011	09/13/2022			09/14/2022 15:45	Yijie Li	2355940, 2355943
SM 4500-F- C-2011	09/13/2022			09/17/2022 09:17	Dale L. Simmons	2355940
	09/13/2022			09/17/2022 09:29	Dale L. Simmons	2355943
SM 5310 B-2011	09/13/2022			09/15/2022 19:33	Khloe J Berg	2355941
	09/13/2022			09/15/2022 20:19	Khloe J Berg	2355944