

Chemical Analysis Report

SW-DIST-2022-12-14-02

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

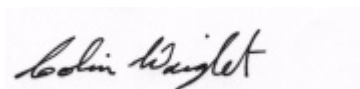
Event Description: **2022 Run 6**
Request ID: **RQ-2022-12-19-04**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-JAN-2023 13:38

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 S Branch @ Stephens Rd.

Collection Date/Time: 12/13/2022 11:50

Field ID: G2SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375181	EPA 180.1 Rev. 2.0	Turbidity	8.4		NTU	P423536	
	SM 2320 B-2011	Total Alkalinity	98		mg CaCO3/L	P423947	
	SM 2540 D-2015	TSS	4	I	mg/L	P423787	
	SM 4500-F- C-2011	Fluoride	0.48		mg F/L	P424213	
2375182	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P424284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P423664	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P423592	
	EPA 365.1 Rev. 2.0	Total-P	0.42		mg P/L	P423569	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P423744	
2375183	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.33		mg P/L	P423551	

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: Wildcat Creek S Branch @ Stephens Rd.

Collection Date/Time: 12/13/2022 11:50

Field ID: G2SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375199	EPA 8321B	Acesulfame K	0.10	U	ug/L	P423561	
		2,4-D	0.0041	I	ug/L	P423628	
		AMPA	1.0	U	ug/L	P423561	
		2,4,5-T	0.0040	U	ug/L	P423628	
		Acetaminophen	0.0080	U	ug/L	P423628	
		Endothall	0.25	U	ug/L	P423561	
		Acetamiprid	0.0020	U	ug/L	P423628	
		Glufosinate	1.0	U	ug/L	P423561	
		Glyphosate	1.0	U	ug/L	P423561	
		Afidopyropen	0.0020	U	ug/L	P423628	
		Sucralose	0.56		ug/L	P423561	
		Bentazon	0.0091		ug/L	P423628	
		Benzovindiflupyr	0.0020	U	ug/L	P423628	
		Carbamazepine	8.0E-04	U	ug/L	P423628	
		Clothianidin	0.0037	I	ug/L	P423628	
		Dinotefuran	0.0062	I	ug/L	P423628	
		Diuron	0.0099		ug/L	P423628	
		Fenuron	0.032	U	ug/L	P423628	
		Fluridone	0.0034		ug/L	P423628	
		Imazapyr	0.076		ug/L	P423628	
		Hydrocodone	0.0020	U	ug/L	P423628	
		Ibuprofen	0.20	U	ug/L	P423628	
		Imidacloprid	0.0097		ug/L	P423628	
		Linuron	0.0040	U	ug/L	P423628	
		Mandestrobin	0.0020	U	ug/L	P423628	
		MCPP	0.0040	U	ug/L	P423628	
		Naproxen	0.0080	U	ug/L	P423628	
		Primidone	0.0040	U	ug/L	P423628	
		Pyraclostrobin	0.0020	U	ug/L	P423628	
		Silvex	0.0040	U	ug/L	P423628	
		Thiamethoxam	0.0061	I	ug/L	P423628	
		Tolfenpyrad	0.0020	U	ug/L	P423628	
		Triclopyr	0.0040	U	ug/L	P423628	

Ref. Method and Comment:
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: McMullen Creek @ Marina

Collection Date/Time: 12/13/2022 12:40

Field ID: G1SW0120

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375175	DEP SOP: NU-094-1	Color (true)	16	A	PCU	P423541	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P423536	
	EPA 300.0 Rev. 2.1	Chloride	1.4E+04		mg Cl/L	P423804	
		Sulfate	2.0E+03		mg SO4/L	P423807	
	SM 2320 B-2011	Total Alkalinity	146		mg CaCO3/L	P423947	
	SM 2540 C-2015	TDS	2.40E+04		mg/L	P423893	
	SM 2540 D-2015	TSS	7	IA	mg/L	P423788	
2375177	SM 4500-F- C-2011	Fluoride	1.0		mg F/L	P424213	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.072		mg N/L	P424223	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P423748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P423770	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P423570	
2375179	SM 5310 B-2011	Organic Carbon	7.8		mg C/L	P423744	
2375201	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P423552	
	EPA 200.7 Rev. 4.4	Calcium	310		mg/L	P423642	
		Iron	300	U	ug/L	P423642	
		Magnesium	923		mg/L	P423642	
		Potassium	270		mg/L	P423642	
		Sodium	7.46E+03		mg/L	P423642	
		Strontium	5.87E+03		ug/L	P423642	
		Tin	30	U	ug/L	P423642	
		Titanium	7.5	U	ug/L	P423642	
		Vanadium	20	U	ug/L	P423642	
		Zinc	50	U	ug/L	P423642	
	EPA 200.8 Rev. 5.4	Aluminum	223		ug/L	P423642	
		Antimony	0.20	U	ug/L	P423642	
		Arsenic	2.84		ug/L	P423642	
		Barium	16.3		ug/L	P423642	
		Beryllium	0.040	U	ug/L	P423642	
		Boron	3.00E+03		ug/L	P423642	
		Cadmium	0.080	U	ug/L	P423642	
		Chromium	1.6	U	ug/L	P423642	
		Cobalt	0.089	I	ug/L	P423642	
		Copper	1.6	U	ug/L	P423642	
		Lead	0.80	U	ug/L	P423642	
		Manganese	15.5		ug/L	P423642	
		Molybdenum	8.4		ug/L	P423642	
		Nickel	2.0	U	ug/L	P423642	
		Selenium	0.80	U	ug/L	P423642	
		Silver	0.040	U	ug/L	P423642	
		Thallium	0.40	U	ug/L	P423642	
	SM 2340 B-2011	Hardness	4570		mg/L	P423642	

Field ID: G1SW0120

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, sodium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Gamble Creek West Branch @ CR 675

Collection Date/Time: 12/13/2022 13:30

Field ID: G2SW0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375176	DEP SOP: NU-094-1	Color (true)	89	A	PCU	P423543	
	EPA 180.1 Rev. 2.0	Turbidity	65		NTU	P423536	
	EPA 300.0 Rev. 2.1	Chloride	20	A	mg Cl/L	P423804	
		Sulfate	47	A	mg SO4/L	P423807	
	SM 2320 B-2011	Total Alkalinity	60		mg CaCO3/L	P423945	
	SM 2540 C-2015	TDS	224		mg/L	P423893	
	SM 2540 D-2015	TSS	15		mg/L	P423786	
	SM 4500-F- C-2011	Fluoride	0.60		mg F/L	P423814	
2375178	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P424222	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P423703	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P423592	
	EPA 365.1 Rev. 2.0	Total-P	2.0		mg P/L	P423568	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P423698	
2375180	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	1.1		mg P/L	P423551	

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: Gamble Creek West Branch @ CR 675

Collection Date/Time: 12/13/2022 13:30

Field ID: G2SW0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375200	EPA 8321B	2,4-D	0.0028	I	ug/L	P423628	
		Acesulfame K	0.10	U	ug/L	P423561	
		2,4,5-T	0.0040	U	ug/L	P423628	
		AMPA	1.4		ug/L	P423561	
		Acetaminophen	0.0080	U	ug/L	P423628	
		Acetamiprid	0.0020	U	ug/L	P423628	
		Endothall	0.25	U	ug/L	P423561	
		Glufosinate	0.10	U	ug/L	P423561	
		Glyphosate	1.9		ug/L	P423561	
		Afidopyropen	0.0020	U	ug/L	P423628	
		Bentazon	0.017		ug/L	P423628	
		Sucralose	0.59		ug/L	P423561	
		Benzovindiflupyr	0.0020	U	ug/L	P423628	
		Carbamazepine	8.0E-04	U	ug/L	P423628	
		Clothianidin	0.0020	U	ug/L	P423628	
		Dinotefuran	0.016		ug/L	P423628	
		Diuron	0.0020	U	ug/L	P423628	
		Fenuron	0.032	U	ug/L	P423628	
		Fluridone	0.0027	I	ug/L	P423628	
		Imazapyr	0.15		ug/L	P423628	
		Hydrocodone	0.0020	U	ug/L	P423628	
		Ibuprofen	0.20	U	ug/L	P423628	
		Imidacloprid	0.0094		ug/L	P423628	
		Linuron	0.0040	U	ug/L	P423628	
		Mandestrobin	0.0020	U	ug/L	P423628	
		MCPP	0.0040	U	ug/L	P423628	
		Naproxen	0.0080	U	ug/L	P423628	
		Primidone	0.0040	U	ug/L	P423628	
		Pyraclostrobin	0.0020	U	ug/L	P423628	
		Silvex	0.0040	U	ug/L	P423628	
		Thiamethoxam	0.0020	U	ug/L	P423628	
		Tolfenpyrad	0.0020	U	ug/L	P423628	
		Triclopyr	0.0040	U	ug/L	P423628	

Sample Location: FB

Collection Date/Time: 12/13/2022 13:40

Field ID: FB_12132022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375184	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P423541	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P423536	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P423804	
		Sulfate	0.20	U	mg SO4/L	P423807	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P423945	
	SM 2540 C-2015	TDS	15	U	mg/L	P423892	
	SM 2540 D-2015	TSS	2	U	mg/L	P423785	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P423949	
2375185	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P424073	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P423703	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423592	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P423568	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P423698	
2375186	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P423551	
2375203	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P423598	
		Iron	30	U	ug/L	P423598	
		Magnesium	0.040	U	mg/L	P423598	
		Potassium	0.30	U	mg/L	P423598	
		Sodium	0.50	U	mg/L	P423598	
		Strontium	2.0	U	ug/L	P423598	
		Tin	3.0	U	ug/L	P423598	
		Titanium	0.75	U	ug/L	P423598	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P423598	
		Zinc	5.0	U	ug/L	P423598	
		Aluminum	5.0	U	ug/L	P423598	
		Antimony	0.050	U	ug/L	P423598	
		Arsenic	0.050	U	ug/L	P423598	
		Barium	0.20	U	ug/L	P423598	
		Beryllium	0.010	U	ug/L	P423598	
		Boron	2.0	U	ug/L	P423598	
		Cadmium	0.020	U	ug/L	P423598	
		Chromium	0.40	U	ug/L	P423598	
		Cobalt	0.020	U	ug/L	P423598	
		Copper	0.40	U	ug/L	P423598	
		Lead	0.20	U	ug/L	P423598	
		Manganese	0.10	U	ug/L	P423598	
		Molybdenum	0.15	U	ug/L	P423598	
		Nickel	0.50	U	ug/L	P423598	
		Selenium	0.20	U	ug/L	P423598	
		Silver	0.010	U	ug/L	P423598	
		Thallium	0.10	U	ug/L	P423598	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P423598	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P423541

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P423543

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423536

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423598

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 200.7 Rev. 4.4
Batch ID: P423642

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: P423598

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423598

Component	Result	Code	Units
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 200.8 Rev. 5.4

Batch ID: P423642

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: P423804

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423807

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P424073

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424073

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424222

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424284

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423664

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423703

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423592

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423770

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423568

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423569

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423570

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423551

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423552

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

Reference Method: EPA 8321B
Batch ID: P423561

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

Reference Method: EPA 8321B
Batch ID: P423628

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P423628

Component	Result	Code	Units
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.20	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: P423945

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011

Batch ID: P423947

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015

Batch ID: P423892

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015

Batch ID: P423893

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P423785

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P423786

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P423787

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P423788

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P423814

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P423949

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P424213

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P423698

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

Reference Method: SM 5310 B-2011
Batch ID: P423744

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: P423541

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P423543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.4		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423536

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	94.3		P	85 - 115
Sodium	98.5		P	85 - 115
Strontium	95.5		P	85 - 115
Tin	98.2		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	98.3		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.9		P	85 - 115
Iron	96.6		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	96.7		P	85 - 115
Sodium	97.3		P	85 - 115
Strontium	98.2		P	85 - 115
Tin	100		P	85 - 115
Titanium	99.8		P	85 - 115
Vanadium	99.3		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	102		P	85 - 115
Barium	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beryllium	92.3		P	85 - 115
Boron	105		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	93.5		P	85 - 115
Cobalt	94.0		P	85 - 115
Copper	97.2		P	85 - 115
Lead	94.0		P	85 - 115
Manganese	97.2		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	99.4		P	85 - 115
Selenium	102		P	85 - 115
Silver	101		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.0		P	85 - 115
Antimony	96.9		P	85 - 115
Arsenic	98.6		P	85 - 115
Barium	95.6		P	85 - 115
Beryllium	86.1		P	85 - 115
Boron	98.5		P	85 - 115
Cadmium	99.1		P	85 - 115
Chromium	92.6		P	85 - 115
Cobalt	93.3		P	85 - 115
Copper	94.8		P	85 - 115
Lead	92.2		P	85 - 115
Manganese	94.4		P	85 - 115
Molybdenum	95.3		P	85 - 115
Nickel	96.2		P	85 - 115
Selenium	98.2		P	85 - 115
Silver	94.0		P	85 - 115
Thallium	95.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423804

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423807

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P424073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424073

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424222

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423703

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423592

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423770

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423568

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423569

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423570

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423551

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423552

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

Reference Method: EPA 8321B
Batch ID: P423561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.1		P	40 - 150
AMPA	106		P	40 - 150
Endothall	97.9		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	98.6		P	40 - 150
Sucralose	113		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P423628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	76.0		P	40 - 150
Acetaminophen	95.1		P	30 - 150
Acetamiprid	83.1		P	40 - 150
Afidopyropen	64.9		P	30 - 150
Bentazon	69.1		P	30 - 150
Benzovindiflupyr	85.1		P	40 - 150
Carbamazepine	81.2		P	40 - 150
Clothianidin	93.6		P	40 - 150
Dinotefuran	95.1		P	40 - 150
Diuron	69.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P423628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	93.5		P	40 - 150
Fluridone	78.0		P	40 - 150
Hydrocodone	86.3		P	40 - 150
Ibuprofen	96.7		P	40 - 150
Imazapyr	83.6		P	40 - 150
Imidacloprid	85.4		P	40 - 150
Linuron	77.2		P	40 - 150
Mandestrobin	91.0		P	40 - 150
MCPP	102		P	40 - 150
Naproxen	87.6		P	40 - 150
Primidone	89.9		P	40 - 150
Pyraclostrobin	78.4		P	40 - 150
Silvex	82.2		P	40 - 150
Thiamethoxam	86.6		P	40 - 150
Tolfenpyrad	40.8		P	30 - 150
Triclopyr	73.2		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P423945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.0		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P423947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	90 - 110

Reference Method: SM 2540 C-2015
Batch ID: P423892

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

Reference Method: SM 2540 C-2015
Batch ID: P423893

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	92.2		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P423785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P423786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.2		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P423787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.7		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P423788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P423814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P423949

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

Reference Method: SM 4500-F- C-2011
Batch ID: P424213

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P423744

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375565	Calcium	99.6		P	80 - 120
2375565	Iron	102	103	P/P	80 - 120
2375565	Magnesium	97.9		P	80 - 120
2375565	Potassium	96.8	97.3	P/P	80 - 120
2375565	Sodium	98.1	97.7	P/P	80 - 120
2375565	Strontium	97.9	98.5	P/P	80 - 120
2375565	Tin	98.7	100	P/P	80 - 120
2375565	Titanium	102	104	P/P	80 - 120
2375565	Vanadium	99.8	102	P/P	80 - 120
2375565	Zinc	99.8	102	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374364	Iron	95.9	97.6	P/P	70 - 130
2374364	Magnesium	102		P	70 - 130
2374364	Potassium	105		P	70 - 130
2374364	Tin	98.5	100	P/P	70 - 130
2374364	Titanium	100	101	P/P	70 - 130
2374364	Vanadium	104	105	P/P	70 - 130
2374364	Zinc	102	103	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375565	Aluminum	98.5	100	P/P	80 - 120
2375565	Antimony	102	104	P/P	80 - 120
2375565	Arsenic	102	104	P/P	80 - 120
2375565	Barium	101	104	P/P	80 - 120
2375565	Beryllium	92.4	94.3	P/P	80 - 120
2375565	Boron	100	103	P/P	80 - 120
2375565	Cadmium	103	107	P/P	80 - 120
2375565	Chromium	94.1	95.8	P/P	80 - 120
2375565	Cobalt	93.0	95.6	P/P	80 - 120
2375565	Copper	95.6	97.2	P/P	80 - 120
2375565	Lead	91.1	93.9	P/P	80 - 120
2375565	Manganese	96.7	98.8	P/P	80 - 120
2375565	Molybdenum	102	103	P/P	80 - 120
2375565	Nickel	97.4	101	P/P	80 - 120
2375565	Selenium	101	102	P/P	80 - 120
2375565	Silver	101	102	P/P	80 - 120
2375565	Thallium	98.9	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374364	Aluminum	97.3	96.8	P/P	70 - 130
2374364	Antimony	98.5	98.3	P/P	70 - 130
2374364	Arsenic	104	104	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374364	Barium	98.1	98.0	P/P	70 - 130
2374364	Beryllium	95.0	92.5	P/P	70 - 130
2374364	Boron	99.2	96.6	P/P	70 - 130
2374364	Cadmium	99.9	99.3	P/P	70 - 130
2374364	Chromium	96.4	95.1	P/P	70 - 130
2374364	Cobalt	99.0	97.3	P/P	70 - 130
2374364	Copper	103	101	P/P	70 - 130
2374364	Lead	93.8	93.6	P/P	70 - 130
2374364	Manganese	97.4	96.6	P/P	70 - 130
2374364	Molybdenum	101	99.5	P/P	70 - 130
2374364	Nickel	103	103	P/P	70 - 130
2374364	Selenium	103	104	P/P	70 - 130
2374364	Silver	93.4	92.6	P/P	70 - 130
2374364	Thallium	98.1	97.9	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375176	Chloride	102		P	90 - 110
2375492	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375176	Sulfate	106		P	90 - 110
2375492	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375493	Ammonia-N	97.2	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375138	Ammonia-N	99.2	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2376052	Ammonia-N	98.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375386	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375418	Kjeldahl Nitrogen	93.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375177	Kjeldahl Nitrogen	102	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423592

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375138	NO2NO3-N	98.3	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374821	NO2NO3-N	95.1	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375138	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375182	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375168	Total-P	97.6	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375059	O-Phosphate-P	99.5	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375079	O-Phosphate-P	96.0	97.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P423561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375144	Acesulfame K	77.0	95.0	P/P	40 - 150
2375144	AMPA	99.4	99.4	P/P	40 - 150
2375144	Endothall	103	100	P/P	40 - 150
2375144	Glufosinate	111	110	P/P	40 - 150
2375144	Glyphosate	97.5	102	P/P	40 - 150
2375144	Sucralose	112	110	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P423628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375490	2,4-D	108	102	P/P	40 - 150
2375490	2,4,5-T	80.2	74.0	P/P	40 - 150
2375490	Acetaminophen	103	100	P/P	30 - 150
2375490	Acetamiprid	87.9	83.9	P/P	40 - 150
2375490	Afidopyropen	64.1	70.2	P/P	30 - 150
2375490	Bentazon	70.5	75.8	P/P	30 - 150
2375490	Benzovindiflupyr	93.9	88.2	P/P	40 - 150
2375490	Carbamazepine	86.2	83.4	P/P	40 - 150
2375490	Clothianidin	100	103	P/P	40 - 150
2375490	Dinotefuran	103	97.9	P/P	40 - 150
2375490	Diuron	79.8	76.3	P/P	40 - 150
2375490	Fenuron	100	101	P/P	40 - 150
2375490	Fluridone	78.9	81.6	P/P	40 - 150
2375490	Hydrocodone	90.1	92.1	P/P	40 - 150
2375490	Ibuprofen	99.9	92.6	P/P	40 - 150
2375490	Imazapyr	90.6	89.4	P/P	40 - 150
2375490	Imidacloprid	92.5	91.9	P/P	40 - 150
2375490	Linuron	81.9	80.5	P/P	40 - 150
2375490	Mandestrobin	94.3	99.3	P/P	40 - 150
2375490	MCP	105	96.5	P/P	40 - 150
2375490	Naproxen	89.4	66.8	P/P	40 - 150
2375490	Primidone	95.7	95.6	P/P	40 - 150
2375490	Pyraclostrobin	88.7	85.3	P/P	40 - 150
2375490	Silvex	78.6	88.1	P/P	40 - 150
2375490	Thiamethoxam	95.2	95.2	P/P	40 - 150
2375490	Tolfenpyrad	50.0	42.3	P/P	30 - 150
2375490	Triclopyr	87.9	74.1	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P423814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374419	Fluoride	101	99.5	P/P	94 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P423949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375417	Fluoride	98.7	99.5	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P424213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375965	Fluoride	98.2	98.8	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375418	Organic Carbon	94.5	95.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P423744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375182	Organic Carbon	94.2	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P423541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375175	Color (true)	4.28	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P423543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375176	Color (true)	17.6	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374898	Turbidity	0.531	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375565	Calcium	0.0263	Spike	P	0 - 20
2375565	Iron	0.379	Spike	P	0 - 20
2375565	Magnesium	0.336	Spike	P	0 - 20
2375565	Potassium	0.461	Spike	P	0 - 20
2375565	Sodium	0.208	Spike	P	0 - 20
2375565	Strontium	0.571	Spike	P	0 - 20
2375565	Tin	1.48	Spike	P	0 - 20
2375565	Titanium	1.88	Spike	P	0 - 20
2375565	Vanadium	2.12	Spike	P	0 - 20
2375565	Zinc	1.87	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374364	Calcium	1.22	Spike	P	0 - 20
2374364	Iron	1.42	Spike	P	0 - 20
2374364	Magnesium	1.66	Spike	P	0 - 20
2374364	Potassium	1.80	Spike	P	0 - 20
2374364	Sodium	1.49	Spike	P	0 - 20
2374364	Strontium	1.55	Spike	P	0 - 20
2374364	Tin	1.88	Spike	P	0 - 20
2374364	Titanium	0.721	Spike	P	0 - 20
2374364	Vanadium	1.07	Spike	P	0 - 20
2374364	Zinc	0.838	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375565	Aluminum	1.62	Spike	P	0 - 20
2375565	Antimony	2.63	Spike	P	0 - 20
2375565	Arsenic	2.00	Spike	P	0 - 20
2375565	Barium	2.63	Spike	P	0 - 20
2375565	Beryllium	2.10	Spike	P	0 - 20
2375565	Boron	2.15	Spike	P	0 - 20
2375565	Cadmium	3.04	Spike	P	0 - 20
2375565	Chromium	1.80	Spike	P	0 - 20
2375565	Cobalt	2.69	Spike	P	0 - 20
2375565	Copper	1.72	Spike	P	0 - 20
2375565	Lead	2.94	Spike	P	0 - 20
2375565	Manganese	1.91	Spike	P	0 - 20
2375565	Molybdenum	0.492	Spike	P	0 - 20
2375565	Nickel	3.81	Spike	P	0 - 20
2375565	Selenium	1.10	Spike	P	0 - 20
2375565	Silver	0.666	Spike	P	0 - 20
2375565	Thallium	2.52	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374364	Aluminum	0.484	Spike	P	0 - 20
2374364	Antimony	0.236	Spike	P	0 - 20
2374364	Arsenic	0.247	Spike	P	0 - 20
2374364	Barium	0.148	Spike	P	0 - 20
2374364	Beryllium	2.67	Spike	P	0 - 20
2374364	Boron	1.77	Spike	P	0 - 20
2374364	Cadmium	0.562	Spike	P	0 - 20
2374364	Chromium	1.35	Spike	P	0 - 20
2374364	Cobalt	1.72	Spike	P	0 - 20
2374364	Copper	1.85	Spike	P	0 - 20
2374364	Lead	0.201	Spike	P	0 - 20
2374364	Manganese	0.601	Spike	P	0 - 20
2374364	Molybdenum	1.60	Spike	P	0 - 20
2374364	Nickel	0.868	Spike	P	0 - 20
2374364	Selenium	1.22	Spike	P	0 - 20
2374364	Silver	0.840	Spike	P	0 - 20
2374364	Thallium	0.217	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375176	Chloride	0.774	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375176	Sulfate	0.638	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375493	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375138	Ammonia-N	0.455	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375177	Ammonia-N	0.327	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376052	Ammonia-N	2.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375386	Kjeldahl Nitrogen	2.22	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375418	Kjeldahl Nitrogen	5.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375177	Kjeldahl Nitrogen	2.43	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375138	NO2NO3-N	0.451	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374821	NO2NO3-N	1.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375138	Total-P	2.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375182	Total-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375168	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375059	O-Phosphate-P	0.150	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375079	O-Phosphate-P	1.20	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P423561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375144	Acesulfame K	21.0	Spike	P	0 - 30
2375144	AMPA	0.00724	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P423561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375144	Endothall	2.13	Spike	P	0 - 30
2375144	Glufosinate	0.419	Spike	P	0 - 30
2375144	Glyphosate	4.40	Spike	P	0 - 30
2375144	Sucralose	0.765	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P423628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375490	2,4-D	6.37	Spike	P	0 - 30
2375490	2,4,5-T	8.04	Spike	P	0 - 30
2375490	Acetaminophen	3.22	Spike	P	0 - 30
2375490	Acetamiprid	4.61	Spike	P	0 - 30
2375490	Afidopyropen	9.12	Spike	P	0 - 30
2375490	Bentazon	7.20	Spike	P	0 - 30
2375490	Benzovindiflupyr	6.34	Spike	P	0 - 30
2375490	Carbamazepine	3.33	Spike	P	0 - 30
2375490	Clothianidin	2.29	Spike	P	0 - 30
2375490	Dinotefuran	4.92	Spike	P	0 - 30
2375490	Diuron	4.49	Spike	P	0 - 30
2375490	Fenuron	0.949	Spike	P	0 - 30
2375490	Fluridone	3.36	Spike	P	0 - 30
2375490	Hydrocodone	2.16	Spike	P	0 - 30
2375490	Ibuprofen	7.56	Spike	P	0 - 30
2375490	Imazapyr	1.32	Spike	P	0 - 30
2375490	Imidacloprid	0.616	Spike	P	0 - 30
2375490	Linuron	1.69	Spike	P	0 - 30
2375490	Mandestrobin	5.14	Spike	P	0 - 30
2375490	MCPP	8.12	Spike	P	0 - 30
2375490	Naproxen	29.0	Spike	P	0 - 30
2375490	Primidone	0.111	Spike	P	0 - 30
2375490	Pyraclostrobin	3.99	Spike	P	0 - 30
2375490	Silvex	11.4	Spike	P	0 - 30
2375490	Thiamethoxam	0.0381	Spike	P	0 - 30
2375490	Tolfenpyrad	16.5	Spike	P	0 - 30
2375490	Triclopyr	17.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P423945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375417	Total Alkalinity	1.63	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P423947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375965	Total Alkalinity	2.71	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P423892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374477	TDS	5.39	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P423893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374869	TDS	5.86	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P423814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374419	Fluoride	1.02	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P423949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375417	Fluoride	0.516	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P424213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375965	Fluoride	0.464	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375418	Organic Carbon	0.881	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P423744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375182	Organic Carbon	0.805	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2375199

Field Sample ID: G2SW0102

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.9	P	30 - 160
EPA 8321B	Diuron-d6	58.0	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	118	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.0	P	30 - 160
EPA 8321B	Primidone-d5	95.2	P	30 - 160
EPA 8321B	Sucralose-d6	61.0	P	30 - 160

Lab Sample ID: 2375200

Field Sample ID: G2SW0156

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.9	P	30 - 160
EPA 8321B	Diuron-d6	55.8	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	111	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.3	P	30 - 160
EPA 8321B	Primidone-d5	95.7	P	30 - 160
EPA 8321B	Sucralose-d6	63.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116438

Included Lab Sample IDs: 2375175, 2375176, 2375181, 2375184

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

Reference Method: DEP SOP: NU-094-1

Run ID: A116439

Included Lab Sample IDs: 2375175, 2375176, 2375184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.0	97.8	P/P	90 - 110
Color (true)	98.3	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A116443

Included Lab Sample IDs: 2375179, 2375180, 2375183, 2375186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116461

Included Lab Sample IDs: 2375178, 2375182, 2375185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116491

Included Lab Sample IDs: 2375177, 2375182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	100	P/P	90 - 110
Total-P	99.2	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116497

Included Lab Sample IDs: 2375178

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116508

Included Lab Sample IDs: 2375185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116526

Included Lab Sample IDs: 2375203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	103	P/P	90 - 110
Antimony	99.1	101	P/P	90 - 110
Arsenic	100	103	P/P	90 - 110
Barium	99.3	100	P/P	90 - 110
Boron	103	101	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Cobalt	91.9	93.8	P/P	90 - 110
Copper	97.5	98.7	P/P	90 - 110
Lead	96.5	97.6	P/P	90 - 110
Manganese	95.9	97.7	P/P	90 - 110
Molybdenum	99.7	100	P/P	90 - 110
Nickel	96.4	98.0	P/P	90 - 110
Selenium	103	106	P/P	90 - 110
Silver	99.0	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116527

Included Lab Sample IDs: 2375178, 2375185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116536

Included Lab Sample IDs: 2375199, 2375200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.0	90.5	P/P	60 - 160
Sucralose	109	114	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116537

Included Lab Sample IDs: 2375203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	93.7	96.1	P/P	90 - 110
Chromium	93.5	90.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116538

Included Lab Sample IDs: 2375199, 2375200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	110	P/P	60 - 160
AMPA	93.6	95.8	P/P	60 - 160
Endothall	103	99.3	P/P	60 - 160
Glufosinate	102	106	P/P	60 - 160
Glufosinate	98.2	96.1	P/P	60 - 160
Glyphosate	100	98.9	P/P	60 - 160
Glyphosate	105	98.4	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116548

Included Lab Sample IDs: 2375182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116559

Included Lab Sample IDs: 2375175, 2375176, 2375184

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

Reference Method: SM 5310 B-2011

Run ID: A116560

Included Lab Sample IDs: 2375177, 2375182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.1	P/P	90 - 110
Organic Carbon	99.0	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116567

Included Lab Sample IDs: 2375178, 2375185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.8	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116570

Included Lab Sample IDs: 2375177

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

Reference Method: SM 4500-F- C-2011

Run ID: A116584

Included Lab Sample IDs: 2375176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116596

Included Lab Sample IDs: 2375177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116621

Included Lab Sample IDs: 2375203

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	105	P/P	95 - 105
Iron	101	105	P/P	95 - 105
Magnesium	98.9	104	P/P	95 - 105
Potassium	97.1	101	P/P	95 - 105
Sodium	98.6	103	P/P	95 - 105
Strontium	99.9	95.8	P/P	95 - 105
Tin	101	96.7	P/P	95 - 105
Titanium	100	96.2	P/P	95 - 105
Vanadium	98.8	95.5	P/P	95 - 105
Zinc	105	98.3	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A116652

Included Lab Sample IDs: 2375175, 2375176, 2375181, 2375184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.5	96.8	P/P	90 - 110
Total Alkalinity	98.3	98.2	P/P	90 - 110
Total Alkalinity	98.5	98.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116652

Included Lab Sample IDs: 2375184

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116666

Included Lab Sample IDs: 2375203

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

Reference Method: EPA 8321B

Run ID: A116684

Included Lab Sample IDs: 2375199, 2375200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	100	P/P	50 - 150
2,4,5-T	109	99.8	P/P	50 - 150
Acetaminophen	110	111	P/P	60 - 160
Acetamiprid	102	100	P/P	50 - 150
Afidopyropen	94.2	74.0	P/P	50 - 150
Bentazon	94.7	96.6	P/P	50 - 160
Benzovindiflupyr	108	114	P/P	50 - 150
Carbamazepine	97.6	99.8	P/P	60 - 150
Clothianidin	108	106	P/P	60 - 150
Dinotefuran	104	106	P/P	50 - 150
Diuron	119	114	P/P	60 - 160
Fenuron	104	100	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116684

Included Lab Sample IDs: 2375199, 2375200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	104	95.3	P/P	60 - 160
Hydrocodone	104	105	P/P	60 - 150
Ibuprofen	122	92.7	P/P	50 - 160
Imazapyr	101	92.0	P/P	50 - 150
Imidacloprid	94.9	93.6	P/P	60 - 150
Linuron	95.6	90.8	P/P	60 - 150
Mandestrobin	109	113	P/P	50 - 150
MCP	103	97.1	P/P	50 - 150
Naproxen	116	64.1	P/P	50 - 160
Primidone	93.9	96.9	P/P	60 - 150
Pyraclostrobin	122	118	P/P	60 - 150
Silvex	98.7	101	P/P	50 - 150
Thiamethoxam	103	104	P/P	50 - 150
Tolfenpyrad	99.1	98.8	P/P	60 - 150
Triclopyr	109	95.1	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116711

Included Lab Sample IDs: 2375185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	97.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116769

Included Lab Sample IDs: 2375175, 2375181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.0	P/P	90 - 110
Fluoride	99.0	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116773

Included Lab Sample IDs: 2375177, 2375178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.4	P/P	90 - 110
Ammonia-N	99.4	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116800

Included Lab Sample IDs: 2375182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.1	96.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116863

Included Lab Sample IDs: 2375201

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116863

Included Lab Sample IDs: 2375201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.4	98.4	P/P	90 - 110
Antimony	98.9	98.4	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Barium	97.7	97.7	P/P	90 - 110
Beryllium	95.1	95.5	P/P	90 - 110
Boron	99.3	98.0	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	96.2	95.4	P/P	90 - 110
Cobalt	94.6	97.0	P/P	90 - 110
Copper	98.2	100	P/P	90 - 110
Manganese	97.7	97.8	P/P	90 - 110
Molybdenum	97.9	97.7	P/P	90 - 110
Nickel	98.6	101	P/P	90 - 110
Selenium	105	104	P/P	90 - 110
Silver	96.4	96.4	P/P	90 - 110
Thallium	97.3	97.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116904

Included Lab Sample IDs: 2375201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.9	97.9	P/P	90 - 110
Iron	98.9	98.3	P/P	90 - 110
Magnesium	99.3	98.3	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Sodium	98.0	98.7	P/P	90 - 110
Strontium	99.2	101	P/P	90 - 110
Tin	99.6	100	P/P	90 - 110
Titanium	99.7	101	P/P	90 - 110
Vanadium	99.9	101	P/P	90 - 110
Zinc	101	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116912

Included Lab Sample IDs: 2375201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	92.9	93.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	100				4.28	
	Color (true)	97.4				17.6	
EPA 180.1 Rev. 2.0	Turbidity	102				0.531	
EPA 200.7 Rev. 4.4	Calcium	106		99.6			0.0263
	Calcium	99.9					1.22
	Iron	102	102	103			0.379
	Iron	96.6	95.9	97.6			1.42
	Magnesium	101	97.9				0.336
	Magnesium	100	102				1.66
	Potassium	94.3	96.8	97.3			0.461
	Potassium	96.7	105				1.80
	Sodium	98.5	98.1	97.7			0.208
	Sodium	97.3					1.49
	Strontium	95.5	97.9	98.5			0.571
	Strontium	98.2					1.55
	Tin	98.2	98.7	100			1.48
	Tin	100	98.5	100			1.88
	Titanium	101	102	104			1.88
	Titanium	99.8	100	101			0.721
	Vanadium	98.3	99.8	102			2.12
	Vanadium	99.3	104	105			1.07
	Zinc	101	99.8	102			1.87
	Zinc	101	102	103			0.838
EPA 200.8 Rev. 5.4	Aluminum	103	98.5	100			1.62
	Aluminum	95.0	97.3	96.8			0.484
	Antimony	103	102	104			2.63
	Antimony	96.9	98.5	98.3			0.236
	Arsenic	102	102	104			2.00
	Arsenic	98.6	104	104			0.247
	Barium	103	101	104			2.63
	Barium	95.6	98.1	98.0			0.148
	Beryllium	92.3	92.4	94.3			2.10
	Beryllium	86.1	95.0	92.5			2.67
	Boron	105	100	103			2.15
	Boron	98.5	99.2	96.6			1.77
	Cadmium	105	103	107			3.04
	Cadmium	99.1	99.9	99.3			0.562
	Chromium	93.5	94.1	95.8			1.80
	Chromium	92.6	96.4	95.1			1.35
	Cobalt	94.0	93.0	95.6			2.69
	Cobalt	93.3	99.0	97.3			1.72
	Copper	97.2	95.6	97.2			1.72
	Copper	94.8	103	101			1.85
	Lead	94.0	91.1	93.9			2.94
	Lead	92.2	93.8	93.6			0.201
	Manganese	97.2	96.7	98.8			1.91
	Manganese	94.4	97.4	96.6			0.601
	Molybdenum	101	102	103			0.492
	Molybdenum	95.3	101	99.5			1.60
	Nickel	99.4	97.4	101			3.81
	Nickel	96.2	103	103			0.868
	Selenium	102	101	102			1.10
	Selenium	98.2	103	104			1.22
	Silver	101	101	102			0.666

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 200.8 Rev. 5.4	Silver	94.0	93.4	92.6			0.840
	Thallium	98.6	98.9	101			2.52
	Thallium	95.6	98.1	97.9			0.217
EPA 300.0 Rev. 2.1	Chloride	103	102	102		0.774	
	Sulfate	103	106	101		0.638	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.2	97.2			0.0
	Ammonia-N	101	99.2	99.8			0.455
	Ammonia-N	98.2					0.327
EPA 351.2 Rev. 2.0	Ammonia-N	98.4	98.0	101			2.09
	Kjeldahl Nitrogen	109	103	106			2.22
	Kjeldahl Nitrogen	102	93.8	100			5.82
EPA 353.2 Rev. 2.0	Kjeldahl Nitrogen	98.4	102	99.2			2.43
	NO2NO3-N	97.5	98.3	98.8			0.451
	NO2NO3-N	95.5	95.1	96.6			1.57
EPA 365.1 Rev. 2.0	Total-P	105	104	107			2.56
	Total-P	105	100	103			1.77
	Total-P	104	97.6	99.1			1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.7	99.5			0.150
	O-Phosphate-P	100	96.0	97.5			1.20
EPA 8321B	2,4-D	102	108	102			6.37
	2,4,5-T	76.0	80.2	74.0			8.04
	Acesulfame K	74.1	77.0	95.0			21.0
	Acetaminophen	95.1	103	100			3.22
	Acetamiprid	83.1	87.9	83.9			4.61
	Afidopyropen	64.9	64.1	70.2			9.12
	AMPA	106	99.4	99.4			0.0072
	Bentazon	69.1	70.5	75.8			7.20
	Benzovindiflupyr	85.1	93.9	88.2			6.34
	Carbamazepine	81.2	86.2	83.4			3.33
	Clothianidin	93.6	100	103			2.29
	Dinotefuran	95.1	103	97.9			4.92
	Diuron	69.3	79.8	76.3			4.49
	Endothall	97.9	103	100			2.13
	Fenuron	93.5	100	101			0.949
	Fluridone	78.0	78.9	81.6			3.36
	Glufosinate	100	111	110			0.419
	Glyphosate	98.6	97.5	102			4.40
	Hydrocodone	86.3	90.1	92.1			2.16
	Ibuprofen	96.7	99.9	92.6			7.56
	Imazapyr	83.6	90.6	89.4			1.32
	Imidacloprid	85.4	92.5	91.9			0.616
	Linuron	77.2	81.9	80.5			1.69
	Mandestrobin	91.0	94.3	99.3			5.14
	MCPP	102	105	96.5			8.12
	Naproxen	87.6	89.4	66.8			29.0
	Primidone	89.9	95.7	95.6			0.111
	Pyraclostrobin	78.4	88.7	85.3			3.99
	Silvex	82.2	78.6	88.1			11.4
	Sucralose	113	112	110			0.765
	Thiamethoxam	86.6	95.2	95.2			0.0381
	Tolfenpyrad	40.8	50.0	42.3			16.5
	Triclopyr	73.2	87.9	74.1			17.0
SM 2320 B-2011	Total Alkalinity	96.0				1.63	
	Total Alkalinity	98.2				2.71	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 2540 C-2015	TDS	96.7			5.39	
	TDS	92.2			5.86	
SM 2540 D-2015	TSS	101				
	TSS	95.2				
	TSS	92.7				
	TSS	102				
SM 4500-F- C-2011	Fluoride	102	101 99.5			1.02
	Fluoride	100	98.7 99.5			0.516
	Fluoride	98.2	98.2 98.8			0.464
SM 5310 B-2011	Organic Carbon	94.4	94.5 95.6			0.881
	Organic Carbon	97.4	94.2 95.2			0.805

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2375175, 2375176, 2375184
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2375175, 2375176, 2375181, 2375184
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2375201, 2375203
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2375201, 2375203
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2375175, 2375176, 2375184
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2375175, 2375176, 2375184
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2375177, 2375178, 2375182, 2375185
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2375177, 2375178, 2375182, 2375185
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2375177, 2375178, 2375182, 2375185
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2375177, 2375178, 2375182, 2375185
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2375179, 2375180, 2375183, 2375186
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2375199, 2375200
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2375175, 2375176, 2375181, 2375184
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2375201, 2375203
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2375175, 2375176, 2375184
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2375175, 2375176, 2375181, 2375184
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2375175, 2375176, 2375181, 2375184
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2375177, 2375178, 2375182, 2375185

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	12/14/2022			12/14/2022 14:47	Alexis Price	2375175
	12/14/2022			12/14/2022 14:48	Alexis Price	2375184
	12/14/2022			12/14/2022 14:59	Alexis Price	2375176
EPA 180.1 Rev. 2.0	12/14/2022			12/14/2022 13:16	Chandler E Cox	2375176
	12/14/2022			12/14/2022 13:39	Chandler E Cox	2375175, 2375181
	12/14/2022			12/14/2022 13:40	Chandler E Cox	2375184
EPA 200.7 Rev. 4.4	12/14/2022	12/15/2022 13:35	George D Taylor	12/21/2022 11:05	McKinley C Carter	2375203
	12/14/2022	12/16/2022 11:40	George D Taylor	01/13/2023 16:00	McKinley C Carter	2375201
	12/14/2022	12/16/2022 11:40	George D Taylor	01/13/2023 16:07	McKinley C Carter	2375201
EPA 200.8 Rev. 5.4	12/14/2022	12/15/2022 13:35	George D Taylor	12/17/2022 01:37	Emily M Philpot	2375203
	12/14/2022	12/15/2022 13:35	George D Taylor	12/18/2022 21:10	Emily M Philpot	2375203
	12/14/2022	12/15/2022 13:35	George D Taylor	12/22/2022 18:22	Emily M Philpot	2375203
	12/14/2022	12/16/2022 11:40	George D Taylor	01/12/2023 02:01	Emily M Philpot	2375201
	12/14/2022	12/16/2022 11:40	George D Taylor	01/12/2023 03:18	Emily M Philpot	2375201
EPA 300.0 Rev. 2.1	12/14/2022	12/16/2022 11:40	George D Taylor	01/13/2023 17:12	Emily M Philpot	2375201
	12/14/2022			12/20/2022 19:10	Anna M. Plaviak	2375176
	12/14/2022			12/20/2022 22:56	Anna M. Plaviak	2375175
	12/14/2022			12/20/2022 23:11	Anna M. Plaviak	2375184
EPA 350.1 Rev. 2.0	12/14/2022			01/03/2023 15:41	Ping Hua	2375185
	12/14/2022			01/06/2023 11:11	Ping Hua	2375178
	12/14/2022			01/06/2023 11:24	Ping Hua	2375177
	12/14/2022			01/09/2023 11:37	Ping Hua	2375182
EPA 351.2 Rev. 2.0	12/14/2022	12/16/2022 13:01	Judith K. Clark	12/19/2022 11:16	Samantha L Bates	2375182
	12/14/2022	12/19/2022 12:30	Simonne.V. Calhoun	12/20/2022 11:05	Samantha L Bates	2375178
	12/14/2022	12/19/2022 12:30	Simonne.V. Calhoun	12/20/2022 11:07	Samantha L Bates	2375185
	12/14/2022	12/20/2022 13:35	Simonne.V. Calhoun	12/21/2022 10:36	Samantha L Bates	2375177
EPA 353.2 Rev. 2.0	12/14/2022			12/15/2022 10:13	Beverly Y. Sanders	2375178
	12/14/2022			12/15/2022 10:15	Beverly Y. Sanders	2375182
	12/14/2022			12/15/2022 10:16	Beverly Y. Sanders	2375185
	12/14/2022			12/19/2022 17:44	Touraj Touran	2375177
EPA 365.1 Rev. 2.0	12/14/2022	12/15/2022 15:15	Simonne.V. Calhoun	12/16/2022 09:54	James L Waggeberby	2375182
	12/14/2022	12/15/2022 15:15	Simonne.V. Calhoun	12/16/2022 10:20	James L Waggeberby	2375177
	12/14/2022	12/15/2022 15:15	Simonne.V. Calhoun	12/16/2022 11:14	James L Waggeberby	2375178
	12/14/2022	12/15/2022 15:15	Simonne.V. Calhoun	12/16/2022 13:02	James L Waggeberby	2375185
EPA 365.1 Rev. 2.0 dissolved	12/14/2022			12/14/2022 16:14	Elise M. Gillis	2375179
	12/14/2022			12/14/2022 17:11	Elise M. Gillis	2375186
	12/14/2022			12/14/2022 17:14	Elise M. Gillis	2375180
	12/14/2022			12/14/2022 17:20	Elise M. Gillis	2375183
EPA 8321B	12/14/2022	12/16/2022 12:30	Manjita Shrestha	12/16/2022 13:42	Manjita Shrestha	2375199
	12/14/2022	12/16/2022 12:30	Manjita Shrestha	12/16/2022 13:55	Manjita Shrestha	2375200

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/14/2022	12/16/2022 12:30	Manjita Shrestha	12/16/2022 16:44	Manjita Shrestha	2375199
	12/14/2022	12/16/2022 12:30	Manjita Shrestha	12/16/2022 21:30	Manjita Shrestha	2375199
	12/14/2022	12/16/2022 12:30	Manjita Shrestha	12/16/2022 21:44	Manjita Shrestha	2375200
	12/14/2022	12/20/2022 08:30	June Rhew	12/20/2022 18:47	Juyoung Kim	2375199
	12/14/2022	12/20/2022 08:30	June Rhew	12/20/2022 19:05	Juyoung Kim	2375200
SM 2320 B-2011	12/14/2022			12/23/2022 04:02	Dale L. Simmons	2375176
	12/14/2022			12/23/2022 04:12	Dale L. Simmons	2375184
	12/14/2022			12/23/2022 17:51	Dale L. Simmons	2375181
	12/14/2022			12/23/2022 19:02	Dale L. Simmons	2375175
SM 2340 B-2011	12/14/2022			01/13/2023 16:00	McKinley C Carter	2375201
	12/14/2022			12/21/2022 11:05	McKinley C Carter	2375203
SM 2540 C-2015	12/14/2022			12/15/2022 16:01	Yijie Li	2375175, 2375176, 2375184
SM 2540 D-2015	12/14/2022			12/15/2022 16:01	Yijie Li	2375175, 2375176, 2375181, 2375184
SM 4500-F- C-2011	12/14/2022			01/05/2023 14:48	Dale L. Simmons	2375181
	12/14/2022			01/05/2023 15:36	Dale L. Simmons	2375175
	12/14/2022			12/20/2022 22:55	Dale L. Simmons	2375176
	12/14/2022			12/23/2022 04:12	Dale L. Simmons	2375184
SM 5310 B-2011	12/14/2022			12/16/2022 16:51	Khloe J Berg	2375178
	12/14/2022			12/16/2022 17:05	Khloe J Berg	2375185
	12/14/2022			12/19/2022 23:12	Elise M. Gillis	2375182
	12/14/2022			12/20/2022 03:19	Elise M. Gillis	2375177