

Chemical Analysis Report

NW-DIST-2021-04-20-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Laurel Hill East Run**

Request ID: **RQ-2021-04-19-26**

Customer: **NW-DIST**

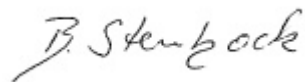
Project ID: **SMP**

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Date Certified: 14-MAY-2021 11:41



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: Trammel Creek East of Hwy 4

Collection Date/Time: 04/19/2021 10:10

Field ID: G4NW0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240991	EPA 200.7 Rev. 4.4	Barium	14.3		ug/L	P397606	
		Calcium	5.04		mg/L	P397606	
		Iron	540		ug/L	P397606	
		Magnesium	0.92		mg/L	P397606	
		Manganese	11.9		ug/L	P397606	
		Potassium	0.85	I	mg/L	P397606	
		Sodium	3.4		mg/L	P397606	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P397606	
		Aluminum	169		ug/L	P397606	
		Antimony	0.056	I	ug/L	P397606	
		Arsenic	0.26		ug/L	P397606	
		Beryllium	0.021	I	ug/L	P397606	
		Boron**	41.0		ug/L	P397606	
		Cadmium	0.020	U	ug/L	P397606	
		Chromium	0.40	U	ug/L	P397606	
		Copper	0.43	I	ug/L	P397606	
		Lead	0.40	I	ug/L	P397606	
		Nickel	0.50	U	ug/L	P397606	
		Selenium	0.20	U	ug/L	P397606	
		Silver	0.010	U	ug/L	P397606	
		Thallium	0.10	U	ug/L	P397606	
	SM 2340B	Hardness	16.4		mg/L	P397606	

Sample Location: Horsehead Creek upstream of Millside Rd

Collection Date/Time: 04/19/2021 10:45

Field ID: G4NW0515

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240976	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P396876	
	EPA 300.0 Rev. 2.1	Chloride	4.0		mg Cl/L	P397123	
		Sulfate	1.1		mg SO4/L	P397126	
		Color (true)	60		PCU	P396873	
	SM 2320 B-2011	Total Alkalinity	5.7		mg CaCO3/L	P397115	
	SM 2540 C-2011	TDS	36		mg/L	P397417	
	SM 2540 D-2011	TSS	7	IA	mg/L	P397076	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P396944	
2240977	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P397508	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P397106	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P397037	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P397012	
	SM 5310 B-2011	Organic Carbon	4.9		mg C/L	P397239	
2240978	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P396859	
2240989	EPA 200.7 Rev. 4.4	Barium	21.1		ug/L	P397606	
		Calcium	3.15		mg/L	P397606	
		Iron	1.04E+03		ug/L	P397606	
		Magnesium	0.98		mg/L	P397606	
		Manganese	37.0		ug/L	P397606	
		Potassium	0.59	I	mg/L	P397606	
		Sodium	2.1		mg/L	P397606	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P397606	
		Aluminum	237		ug/L	P397606	
		Antimony	0.050	U	ug/L	P397606	
		Arsenic	0.48		ug/L	P397606	
		Beryllium	0.023	I	ug/L	P397606	
		Boron**	7.7	I	ug/L	P397606	
		Cadmium	0.020	U	ug/L	P397606	
		Chromium	0.40	U	ug/L	P397606	
		Copper	0.44	I	ug/L	P397606	
		Lead	0.34	I	ug/L	P397606	
		Nickel	0.50	U	ug/L	P397606	
		Selenium	0.20	U	ug/L	P397606	
		Silver	0.010	U	ug/L	P397606	
		Thallium	0.10	U	ug/L	P397606	
	SM 2340B	Hardness	11.9		mg/L	P397606	

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Pond Creek upstream of Bob Sikes Hwy

Collection Date/Time: 04/19/2021 11:15

Field ID: G4NW0522

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240992	EPA 200.7 Rev. 4.4	Barium	18.2		ug/L	P397606	
		Calcium	4.91		mg/L	P397606	
		Iron	1.35E+03		ug/L	P397606	
		Magnesium	1.39		mg/L	P397606	
		Manganese	57.8		ug/L	P397606	
		Potassium	0.94	I	mg/L	P397606	
		Sodium	2.6		mg/L	P397606	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P397606	
		Aluminum	154		ug/L	P397606	
		Antimony	0.067	I	ug/L	P397606	
		Arsenic	0.88		ug/L	P397606	
		Beryllium	0.014	I	ug/L	P397606	
		Boron**	11.9		ug/L	P397606	
		Cadmium	0.020	U	ug/L	P397606	
		Chromium	0.40	U	ug/L	P397606	
		Copper	0.59	I	ug/L	P397606	
		Lead	0.40	I	ug/L	P397606	
		Nickel	0.50	U	ug/L	P397606	
		Selenium	0.20	U	ug/L	P397606	
		Silver	0.010	U	ug/L	P397606	
		Thallium	0.10	U	ug/L	P397606	
	SM 2340B	Hardness	18.0		mg/L	P397606	

Sample Location: Pond Creek in McCloud Bay upstream of Lake Ella Road **Collection Date/Time: 04/19/2021 11:40**

Field ID: G4NW0350

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240988	EPA 8321B	2,4-D	0.0047	I	ug/L	P396769	
		Acesulfame K	0.10	UJ	ug/L	P396893	MS
		AMPA	0.10	U	ug/L	P396893	
		2,4,5-T	0.0040	U	ug/L	P396769	
		Sucralose	0.087		ug/L	P396893	
		Acetaminophen	0.0080	U	ug/L	P396769	MS, RPD
		Endothall	0.25	U	ug/L	P396893	
		Acetamiprid	0.0020	U	ug/L	P396769	
		Glufosinate	0.10	U	ug/L	P396893	
		Glyphosate	0.10	U	ug/L	P396893	
		Afidopyropen	0.0020	U	ug/L	P396769	
		Bentazon	8.0E-04	U	ug/L	P396769	
		Benzovindiflupyr	0.0020	U	ug/L	P396769	
		Carbamazepine	8.0E-04	U	ug/L	P396769	
		Clothianidin	0.0020	U	ug/L	P396769	
		Dinotefuran	0.0020	U	ug/L	P396769	
		Diuron	0.0020	U	ug/L	P396769	
		Fenuron	0.016	U	ug/L	P396769	
		Fluridone	8.0E-04	U	ug/L	P396769	
		Imazapyr	0.0065	I	ug/L	P396769	
		Hydrocodone	0.0020	U	ug/L	P396769	
		Ibuprofen	0.020	U	ug/L	P396769	
		Imidacloprid	0.0020	U	ug/L	P396769	MS
		Linuron	0.0040	U	ug/L	P396769	
		Mandestrobin	0.0020	U	ug/L	P396769	
		MCPP	0.0020	U	ug/L	P396769	MS
		Naproxen	0.0080	U	ug/L	P396769	
		Primidone	0.0040	U	ug/L	P396769	
		Pyraclostrobin	0.0020	U	ug/L	P396769	
		Thiamethoxam	0.0020	U	ug/L	P396769	MS
		Tolfenpyrad	0.0020	U	ug/L	P396769	
		Triclopyr	0.0040	U	ug/L	P396769	RPD

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

Sample Location: Poverty Creek upstream of Poverty Creek Rd **Collection Date/Time: 04/19/2021 12:00**

Field ID: G4NW0427

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240979	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P396876	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P397123	
		Sulfate	2.3		mg SO4/L	P397126	
		Color (true)	31		PCU	P396873	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P397115	
	SM 2540 C-2011	TDS	24	I	mg/L	P397414	
	SM 2540 D-2011	TSS	17		mg/L	P397162	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P396944	
2240980	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P397508	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P397106	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P397037	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P397095	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P397239	
2240981	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P396859	
2240990	EPA 200.7 Rev. 4.4	Barium	16.3		ug/L	P397606	
		Calcium	0.69		mg/L	P397606	
		Iron	670		ug/L	P397606	
		Magnesium	0.49		mg/L	P397606	
		Manganese	16.7		ug/L	P397606	
		Potassium	0.30	U	mg/L	P397606	
		Sodium	1.8	I	mg/L	P397606	
		Zinc	7.3	I	ug/L	P397606	
	EPA 200.8 Rev. 5.4	Aluminum	521		ug/L	P397606	
		Antimony	0.050	U	ug/L	P397606	
		Arsenic	0.34		ug/L	P397606	
		Beryllium	0.201		ug/L	P397606	
		Boron**	7.6	I	ug/L	P397606	
		Cadmium	0.029	I	ug/L	P397606	
		Chromium	0.55	I	ug/L	P397606	
		Copper	0.40	U	ug/L	P397606	
		Lead	0.46		ug/L	P397967	
		Nickel	1.3	I	ug/L	P397606	
		Selenium	0.20	U	ug/L	P397606	
		Silver	0.010	U	ug/L	P397606	
		Thallium	0.10	U	ug/L	P397606	
		Hardness	3.7		mg/L	P397606	
	SM 2340B						

Ref. Method and Comment:

SM 2120 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: The beryllium result was confirmed in the undigested sample on 05/07/2021.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396876

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P397606

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P397606

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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
Copper	0.40	U	ug/L
Lead	0.20	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: P397967

Component	Result	Code	Units
Lead	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397123

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397126

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397508

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397106

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397037

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397012

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397095

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396859

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

Reference Method: EPA 8321B
Batch ID: P396769

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	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P396769

Component	Result	Code	Units
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P396893

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: SM 2120 B-2011

Batch ID: P396873

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P397115

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

Reference Method: SM 2540 C-2011

Batch ID: P397414

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P397417

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P397076

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P397162

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P397239

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.2		P	85 - 115
Calcium	107		P	85 - 115
Iron	105		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	101		P	85 - 115
Potassium	103		P	85 - 115
Sodium	105		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.5		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	101		P	85 - 115
Beryllium	85.4		P	85 - 115
Boron	99.0		P	85 - 115
Cadmium	95.6		P	85 - 115
Chromium	95.8		P	85 - 115
Copper	95.6		P	85 - 115
Lead	93.3		P	85 - 115
Nickel	97.5		P	85 - 115
Selenium	100		P	85 - 115
Silver	98.5		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	96.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P397123

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P397126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P397508

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397106

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397037

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397012

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397095

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396859

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

Reference Method: EPA 8321B
Batch ID: P396769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
2,4,5-T	119		P	30 - 160
Acetaminophen	76.4		P	30 - 150
Acetamiprid	94.3		P	30 - 160
Afidopyropen	73.3		P	30 - 160
Bentazon	37.3		P	30 - 150
Benzovindiflupyr	82.9		P	30 - 160
Carbamazepine	85.9		P	30 - 160
Clothianidin	97.4		P	30 - 160
Dinotefuran	87.2		P	30 - 160
Diuron	76.7		P	30 - 160
Fenuron	98.2		P	30 - 160
Fluridone	97.0		P	30 - 160
Hydrocodone	93.0		P	30 - 160
Ibuprofen	82.3		P	30 - 160
Imazapyr	107		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	70.9		P	30 - 160
Mandestrobin	90.0		P	30 - 160
MCPP	140		P	30 - 160
Naproxen	99.3		P	30 - 160
Primidone	75.4		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P396769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	79.3		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.7		P	30 - 160
Triclopyr	125		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396893

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	124		P	40 - 150
AMPA	97.8		P	40 - 150
Endothall	143		P	40 - 150
Glufosinate	99.6		P	40 - 150
Glyphosate	89.4		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P396873

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P397115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P396944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P397239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240961	Barium	98.5	96.2	P/P	80 - 120
2240961	Calcium	104		P	80 - 120
2240961	Iron	106	104	P/P	80 - 120
2240961	Magnesium	98.5		P	80 - 120
2240961	Manganese	101	99.4	P/P	80 - 120
2240961	Potassium	102	101	P/P	80 - 120
2240961	Sodium	103		P	80 - 120
2240961	Zinc	99.8	97.8	P/P	80 - 120
2240990	Barium	101		P	80 - 120
2240990	Calcium	108		P	80 - 120
2240990	Iron	105		P	80 - 120
2240990	Magnesium	105		P	80 - 120
2240990	Manganese	103		P	80 - 120
2240990	Potassium	109		P	80 - 120
2240990	Sodium	105		P	80 - 120
2240990	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240961	Aluminum	90.4	94.3	P/P	80 - 120
2240961	Antimony	100	104	P/P	80 - 120
2240961	Arsenic	94.5	100	P/P	80 - 120
2240961	Beryllium	101	90.1	P/P	80 - 120
2240961	Boron	93.4	97.1	P/P	80 - 120
2240961	Cadmium	96.3	106	P/P	80 - 120
2240961	Chromium	95.0	98.1	P/P	80 - 120
2240961	Copper	92.6	96.9	P/P	80 - 120
2240961	Lead	92.4	104	P/P	80 - 120
2240961	Nickel	92.0	94.8	P/P	80 - 120
2240961	Selenium	95.6	101	P/P	80 - 120
2240961	Silver	96.1	98.7	P/P	80 - 120
2240961	Thallium	101	107	P/P	80 - 120
2240990	Aluminum	93.1		P	80 - 120
2240990	Antimony	99.3		P	80 - 120
2240990	Arsenic	97.1		P	80 - 120
2240990	Beryllium	89.1		P	80 - 120
2240990	Boron	98.1		P	80 - 120
2240990	Cadmium	100		P	80 - 120
2240990	Chromium	97.4		P	80 - 120
2240990	Copper	99.2		P	80 - 120
2240990	Lead	94.8		P	80 - 120
2240990	Nickel	95.4		P	80 - 120
2240990	Selenium	96.7		P	80 - 120
2240990	Silver	103		P	80 - 120
2240990	Thallium	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397967

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P397967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2243339	Lead	96.0		P	80 - 120
2243580	Lead	98.2	96.2	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240914	Chloride	98.3		P	90 - 110
2241152	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240914	Sulfate	95.3		P	90 - 110
2241152	Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241032	Ammonia-N	96.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240980	Kjeldahl Nitrogen	105	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241011	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240977	Total-P	109	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241492	Total-P	108	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240922	O-Phosphate-P	97.8	97.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P396769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240190	2,4-D	130	149	P/P	30 - 160
2240190	2,4,5-T	97.7	132	P/P	30 - 160
2240190	Acetaminophen	96.0	237	P/F	30 - 150
2240190	Acetamiprid	106	109	P/P	30 - 160
2240190	Afidopyropen	80.6	79.3	P/P	30 - 160
2240190	Bentazon	33.0	41.8	P/P	30 - 150
2240190	Benzovindiflupyr	85.2	96.8	P/P	30 - 160
2240190	Carbamazepine	84.5	95.2	P/P	30 - 160
2240190	Clothianidin	120	129	P/P	30 - 160
2240190	Dinotefuran	114	118	P/P	30 - 160
2240190	Diuron	74.4	70.0	P/P	30 - 160
2240190	Fenuron	112	122	P/P	30 - 160
2240190	Fluridone	103	106	P/P	30 - 160
2240190	Hydrocodone	115	125	P/P	30 - 160
2240190	Ibuprofen	69.9	90.7	P/P	30 - 160
2240190	Imazapyr	129	149	P/P	30 - 160
2240190	Imidacloprid	149	185	P/F	30 - 160
2240190	Linuron	89.4	94.7	P/P	30 - 160
2240190	Mandestrobin	88.6	94.9	P/P	30 - 160
2240190	MCCP	152	177	P/F	30 - 160
2240190	Naproxen	90.5	99.2	P/P	30 - 160
2240190	Primidone	108	112	P/P	30 - 160
2240190	Pyraclostrobin	77.8	87.0	P/P	30 - 160
2240190	Thiamethoxam	146	170	P/F	30 - 160
2240190	Tolfenpyrad	62.1	57.3	P/P	30 - 160
2240190	Triclopyr	98.0	149	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240988	Acesulfame K	152	137	F/P	40 - 150
2240988	AMPA	99.5	102	P/P	40 - 150
2240988	Endothall	98.4	90.0	P/P	40 - 150
2240988	Glufosinate	101	94.4	P/P	40 - 150
2240988	Glyphosate	63.8	80.9	P/P	40 - 140
2240988	Sucralose	108	107	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P396944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240949	Fluoride	98.5	97.9	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P397239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240950	Organic Carbon	96.9	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P396876

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240948	Turbidity	1.48	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P397606

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240961	Barium	2.35	Spike	P	0 - 20
2240961	Calcium	1.44	Spike	P	0 - 20
2240961	Iron	1.24	Spike	P	0 - 20
2240961	Magnesium	1.34	Spike	P	0 - 20
2240961	Manganese	2.04	Spike	P	0 - 20
2240961	Potassium	1.06	Spike	P	0 - 20
2240961	Sodium	0.730	Spike	P	0 - 20
2240961	Zinc	2.04	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397606

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240961	Aluminum	4.18	Spike	P	0 - 20
2240961	Antimony	4.16	Spike	P	0 - 20
2240961	Arsenic	5.86	Spike	P	0 - 20
2240961	Beryllium	11.7	Spike	P	0 - 20
2240961	Boron	3.33	Spike	P	0 - 20
2240961	Cadmium	9.83	Spike	P	0 - 20
2240961	Chromium	3.10	Spike	P	0 - 20
2240961	Copper	4.56	Spike	P	0 - 20
2240961	Lead	11.9	Spike	P	0 - 20
2240961	Nickel	2.97	Spike	P	0 - 20
2240961	Selenium	5.30	Spike	P	0 - 20
2240961	Silver	2.62	Spike	P	0 - 20
2240961	Thallium	6.02	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P397967

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2243580	Lead	1.99	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P397123

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241152	Chloride	0.0752	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241152	Sulfate	0.0738	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241032	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240980	Kjeldahl Nitrogen	3.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241011	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240977	Total-P	2.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241492	Total-P	2.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240922	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P396769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240190	2,4-D	13.6	Spike	P	0 - 30
2240190	2,4,5-T	29.7	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P396769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240190	Acetaminophen	84.5	Spike	F	0 - 30
2240190	Acetamiprid	2.55	Spike	P	0 - 30
2240190	Afidopyropen	1.68	Spike	P	0 - 30
2240190	Bentazon	17.0	Spike	P	0 - 30
2240190	Benzovindiflupyr	12.8	Spike	P	0 - 30
2240190	Carbamazepine	11.0	Spike	P	0 - 30
2240190	Clothianidin	7.28	Spike	P	0 - 30
2240190	Dinotefuran	3.60	Spike	P	0 - 30
2240190	Diuron	6.08	Spike	P	0 - 30
2240190	Fenuron	8.32	Spike	P	0 - 30
2240190	Fluridone	2.87	Spike	P	0 - 30
2240190	Hydrocodone	8.23	Spike	P	0 - 30
2240190	Ibuprofen	25.9	Spike	P	0 - 30
2240190	Imazapyr	14.4	Spike	P	0 - 30
2240190	Imidacloprid	19.2	Spike	P	0 - 30
2240190	Linuron	5.80	Spike	P	0 - 30
2240190	Mandestrobin	6.94	Spike	P	0 - 30
2240190	MCPP	14.7	Spike	P	0 - 30
2240190	Naproxen	9.23	Spike	P	0 - 30
2240190	Primidone	2.91	Spike	P	0 - 30
2240190	Pyraclostrobin	11.1	Spike	P	0 - 30
2240190	Thiamethoxam	15.5	Spike	P	0 - 30
2240190	Tolfenpyrad	8.09	Spike	P	0 - 30
2240190	Triclopyr	41.0	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P396893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240988	Acesulfame K	10.0	Spike	P	0 - 30
2240988	AMPA	2.79	Spike	P	0 - 30
2240988	Endothall	8.93	Spike	P	0 - 30
2240988	Glufosinate	6.28	Spike	P	0 - 30
2240988	Glyphosate	23.7	Spike	P	0 - 30
2240988	Sucralose	0.828	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P397115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240949	Total Alkalinity	0.595	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P397414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240949	TDS	2.68	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P397417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241567	TDS	2.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P396944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240949	Fluoride	0.454	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P397239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240950	Organic Carbon	2.22	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2240988

Field Sample ID: G4NW0350

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	148	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	123	P	30 - 160
EPA 8321B	Diuron-d6	83.9	P	30 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Endothall-d6	111	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	50.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	50.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	102	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104857

Included Lab Sample IDs: 2240978, 2240981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A104860

Included Lab Sample IDs: 2240976, 2240979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.3	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104861

Included Lab Sample IDs: 2240976, 2240979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104869

Included Lab Sample IDs: 2240976, 2240979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	98.9	P/P	90 - 110
Sulfate	97.7	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104891

Included Lab Sample IDs: 2240976, 2240979

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

Reference Method: EPA 8321B

Run ID: A104895

Included Lab Sample IDs: 2240988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	128	96.0	P/P	40 - 160
AMPA	107	102	P/P	40 - 160
Endothall	139	104	P/P	40 - 160
Glufosinate	83.4	103	P/P	40 - 160
Glyphosate	89.6	86.0	P/P	40 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104904

Included Lab Sample IDs: 2240977, 2240980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A104962

Included Lab Sample IDs: 2240976, 2240979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	98.6	P/P	90 - 110
Total Alkalinity	98.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104990

Included Lab Sample IDs: 2240977, 2240980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104993

Included Lab Sample IDs: 2240977

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105005

Included Lab Sample IDs: 2240980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A105018

Included Lab Sample IDs: 2240977, 2240980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.1	95.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A105083

Included Lab Sample IDs: 2240988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A105098

Included Lab Sample IDs: 2240988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.4	116	P/P	50 - 150
2,4,5-T	118	109	P/P	50 - 150
Acetaminophen	93.2	125	P/P	60 - 160
Acetamiprid	116	122	P/P	50 - 150
Afidopyropen	108	133	P/P	50 - 150
Bentazon	137	132	P/P	50 - 160
Benzovindiflupyr	101	114	P/P	50 - 160
Carbamazepine	104	119	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A105098
Included Lab Sample IDs: 2240988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Clothianidin	107	108	P/P	60 - 150
Dinotefuran	111	135	P/P	50 - 150
Diuron	88.3	110	P/P	60 - 160
Fenuron	107	116	P/P	60 - 150
Fluridone	117	129	P/P	60 - 160
Hydrocodone	113	130	P/P	60 - 150
Ibuprofen	86.0	89.7	P/P	50 - 160
Imazapyr	126	129	P/P	50 - 150
Imidacloprid	102	124	P/P	60 - 150
Linuron	100	122	P/P	60 - 150
Mandestrobin	109	117	P/P	50 - 150
MCPP	112	113	P/P	50 - 150
Naproxen	113	116	P/P	50 - 160
Primidone	95.8	110	P/P	60 - 150
Pyraclostrobin	116	120	P/P	60 - 150
Thiamethoxam	116	131	P/P	50 - 150
Tolfenpyrad	116	127	P/P	60 - 150
Triclopyr	98.7	115	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A105117
Included Lab Sample IDs: 2240977, 2240980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	97.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A105239
Included Lab Sample IDs: 2240989, 2240990, 2240991, 2240992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Calcium	99.7	101	P/P	90 - 110
Iron	99.7	100	P/P	90 - 110
Magnesium	99.4	99.3	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A105242
Included Lab Sample IDs: 2240989, 2240990, 2240991, 2240992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	105	105	P/P	90 - 110
Arsenic	100	99.5	P/P	90 - 110
Beryllium	99.9	98.5	P/P	90 - 110
Boron	102	103	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105242

Included Lab Sample IDs: 2240989, 2240990, 2240991, 2240992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	101	101	P/P	90 - 110
Copper	98.8	98.5	P/P	90 - 110
Nickel	98.8	99.5	P/P	90 - 110
Selenium	103	102	P/P	90 - 110
Silver	99.8	101	P/P	90 - 110
Thallium	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105268

Included Lab Sample IDs: 2240989, 2240991, 2240992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	106	96.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105386

Included Lab Sample IDs: 2240990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	101	101	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
EPA 180.1 Rev. 2.0	Turbidity								1.48	
EPA 200.7 Rev. 4.4	Barium	98.2			98.5	96.2	101			2.35
	Calcium	107			104	108				1.44
	Iron	105			106	104	105			1.24
	Magnesium	101			98.5	105				1.34
	Manganese	101			101	99.4	103			2.04
	Potassium	103			102	101	109			1.06
	Sodium	105			103	105				0.730
	Zinc	99.3			99.8	97.8	104			2.04
EPA 200.8 Rev. 5.4	Aluminum	98.5			90.4	94.3	93.1			4.18
	Antimony	103			100	104	99.3			4.16
	Arsenic	101			94.5	100	97.1			5.86
	Beryllium	85.4			101	90.1	89.1			11.7
	Boron	99.0			93.4	97.1	98.1			3.33
	Cadmium	95.6			96.3	106	100			9.83
	Chromium	95.8			95.0	98.1	97.4			3.10
	Copper	95.6			92.6	96.9	99.2			4.56
	Lead	93.3			92.4	104	94.8			11.9
	Lead	96.3			96.0	98.2	96.2			1.99
	Nickel	97.5			92.0	94.8	95.4			2.97
	Selenium	100			95.6	101	96.7			5.30
	Silver	98.5			96.1	98.7	103			2.62
	Thallium	104			101	107	104			6.02
EPA 300.0 Rev. 2.1	Chloride	97.5			97.2	98.3			0.0752	
	Sulfate	97.3			96.5	95.3			0.0738	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6			96.0	98.0				1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104			105	101				3.26
EPA 353.2 Rev. 2.0	NO2NO3-N	102			100	101				0.426
EPA 365.1 Rev. 2.0	Total-P	109			109	106				2.59
	Total-P	105			108	105				2.53
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6			97.8	97.8				0.0
EPA 8321B	2,4-D	127			130	149				13.6
	2,4,5-T	119			97.7	132				29.7
	Acesulfame K	124			152	137				10.0
	Acetaminophen	76.4			96.0	237				84.5
	Acetamiprid	94.3			106	109				2.55
	Afidopyropen	73.3			80.6	79.3				1.68
	AMPA	97.8			102	99.5				2.79
	Bentazon	37.3			33.0	41.8				17.0
	Benzovindiflupyr	82.9			85.2	96.8				12.8
	Carbamazepine	85.9			84.5	95.2				11.0
	Clothianidin	97.4			120	129				7.28
	Dinotefuran	87.2			114	118				3.60
	Diuron	76.7			74.4	70.0				6.08
	Endothall	143			98.4	90.0				8.93
	Fenuron	98.2			112	122				8.32
	Fluridone	97.0			103	106				2.87
	Glufosinate	99.6			94.4	101				6.28
	Glyphosate	89.4			63.8	80.9				23.7
	Hydrocodone	93.0			115	125				8.23
	Ibuprofen	82.3			69.9	90.7				25.9
	Imazapyr	107			129	149				14.4
	Imidacloprid	107			149	185				19.2
	Linuron	70.9			89.4	94.7				5.80

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	90.0	88.6	94.9		6.94
	MCP	140	152	177		14.7
	Naproxen	99.3	90.5	99.2		9.23
	Primidone	75.4	108	112		2.91
	Pyraclostrobin	79.3	77.8	87.0		11.1
	Sucralose	105	108	107		0.828
	Thiamethoxam	101	146	170		15.5
	Tolfenpyrad	56.7	62.1	57.3		8.09
	Triclopyr	125	98.0	149		41.0
SM 2120 B-2011	Color (true)	98.1				
SM 2320 B-2011	Total Alkalinity	100			0.595	
SM 2540 C-2011	TDS				2.68	
	TDS				2.16	
SM 4500 F-C-2011	Fluoride	99.1	98.5	97.9		0.454
SM 5310 B-2011	Organic Carbon	96.9	96.9	99.7		2.22

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2240976, 2240979
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2240989, 2240990, 2240991, 2240992
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2240989, 2240990, 2240991, 2240992
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2240976, 2240979
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2240976, 2240979
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2240977, 2240980
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2240977, 2240980
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2240977, 2240980
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2240977, 2240980
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2240978, 2240981
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2240988
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2240988
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2240976, 2240979
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2240976, 2240979
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2240989, 2240990, 2240991, 2240992
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2240976, 2240979
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2240976, 2240979
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2240976, 2240979
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2240977, 2240980

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/20/2021			04/20/2021 15:50	Yen Ta	2240976, 2240979
EPA 200.7 Rev. 4.4	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 15:12	Betina Topolski	2240989
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 15:17	Betina Topolski	2240990
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 15:37	Betina Topolski	2240991
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 15:44	Betina Topolski	2240992
EPA 200.8 Rev. 5.4	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 15:59	McKinley C Carter	2240989
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 16:06	McKinley C Carter	2240991
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 16:14	McKinley C Carter	2240992
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/06/2021 16:44	McKinley C Carter	2240990
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/08/2021 03:43	Alexander Thompson	2240989
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/08/2021 03:48	Alexander Thompson	2240991
	04/20/2021	05/04/2021 13:55	Elliott D. Healy	05/08/2021 03:54	Alexander Thompson	2240992
	04/20/2021	05/11/2021 13:20	Elliott D. Healy	05/13/2021 00:43	Alexander Thompson	2240990
EPA 300.0 Rev. 2.1	04/20/2021			04/23/2021 20:09	Lipi Saha	2240976
	04/20/2021			04/23/2021 20:21	Lipi Saha	2240979
EPA 350.1 Rev. 2.0	04/20/2021			05/01/2021 10:12	Ping Hua	2240977
	04/20/2021			05/01/2021 10:14	Ping Hua	2240980
EPA 351.2 Rev. 2.0	04/20/2021	04/25/2021 14:43	Benjamin T. Nordmann	04/26/2021 14:57	Virginia P. Brown	2240977
	04/20/2021	04/25/2021 14:43	Benjamin T. Nordmann	04/26/2021 14:59	Virginia P. Brown	2240980
EPA 353.2 Rev. 2.0	04/20/2021			04/22/2021 12:09	Beverly Y. Sanders	2240977
	04/20/2021			04/22/2021 12:10	Beverly Y. Sanders	2240980
EPA 365.1 Rev. 2.0	04/20/2021	04/22/2021 16:03	Yen Ta	04/26/2021 16:02	Shengyu Ding	2240977
	04/20/2021	04/24/2021 18:49	Madeline Gruver	04/27/2021 10:21	Shengyu Ding	2240980
EPA 365.1 Rev. 2.0 dissolved	04/20/2021			04/20/2021 14:34	Patrick M. Roche	2240978
	04/20/2021			04/20/2021 14:35	Patrick M. Roche	2240981
EPA 8321B	04/20/2021	04/20/2021 14:00	Hoor Shaik	04/30/2021 14:59	Juyoung Kim	2240988
	04/20/2021	04/21/2021 12:00	Rebecca Ware	04/21/2021 13:53	Rebecca Ware	2240988
	04/20/2021	04/21/2021 12:00	Rebecca Ware	04/28/2021 21:42	Rebecca Ware	2240988
SM 2120 B-2011	04/20/2021			04/20/2021 16:05	Madeline Gruver	2240976
	04/20/2021			04/20/2021 16:06	Madeline Gruver	2240979
SM 2320 B-2011	04/20/2021			04/23/2021 19:24	Dale L. Simmons	2240976
	04/20/2021			04/23/2021 20:02	Dale L. Simmons	2240979
SM 2340B	04/20/2021			05/06/2021 15:12	Betina Topolski	2240989
	04/20/2021			05/06/2021 15:17	Betina Topolski	2240990
	04/20/2021			05/06/2021 15:37	Betina Topolski	2240991
	04/20/2021			05/06/2021 15:44	Betina Topolski	2240992
SM 2540 C-2011	04/20/2021			04/23/2021 15:31	Yijie Li	2240976, 2240979
SM 2540 D-2011	04/20/2021			04/22/2021 15:21	Yijie Li	2240976
	04/20/2021			04/23/2021 15:31	Yijie Li	2240979
SM 4500 F-C-2011	04/20/2021			04/21/2021 22:15	Dale L. Simmons	2240976

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	04/20/2021			04/21/2021 22:23	Dale L. Simmons	2240979
SM 5310 B-2011	04/20/2021			04/23/2021 23:04	Lauren Lees	2240977
	04/20/2021			04/23/2021 23:14	Lauren Lees	2240980