

Chemical Analysis Report

NW-DIST-2021-09-23-01

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

Event Description: **Yellow River Run**
Request ID: **RQ-2021-08-30-16**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda K Butler

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

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 15-OCT-2021 17:58



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: Yellow River at Oak Grove Boat Ramp

Collection Date/Time: 09/22/2021 12:20

Field ID: G4NW0526

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277943	EPA 8321B	2,4-D	0.0044	I J	ug/L	P404244	MS
		Acesulfame K	0.10	UJ	ug/L	P404096	MS, RPD
		2,4,5-T	0.0040	U	ug/L	P404244	
		AMPA	0.10	U	ug/L	P404096	
		Acetaminophen	0.0080	U	ug/L	P404244	
		Acetamiprid	0.0020	U	ug/L	P404244	
		Endothall	0.25	U	ug/L	P404096	
		Glufosinate	0.10	U	ug/L	P404096	
		Glyphosate	0.10	U	ug/L	P404096	
		Afidopyropen	0.0020	U	ug/L	P404244	
		Bentazon	8.0E-04	U	ug/L	P404244	
		Sucralose	0.026	I	ug/L	P404096	
		Benzovindiflupyr	0.0020	U	ug/L	P404244	
		Carbamazepine	8.0E-04	U	ug/L	P404244	
		Clothianidin	0.0020	U	ug/L	P404244	
		Dinotefuran	0.0020	U	ug/L	P404244	
		Diuron	0.0020	U	ug/L	P404244	
		Fenuron	0.016	U	ug/L	P404244	
		Fluridone	8.0E-04	U	ug/L	P404244	
		Imazapyr	0.022		ug/L	P404244	
		Hydrocodone	0.0020	U	ug/L	P404244	
		Ibuprofen	0.020	U	ug/L	P404244	
		Imidacloprid	0.0020	UJ	ug/L	P404244	MS
		Linuron	0.0040	U	ug/L	P404244	
		Mandestrobin	0.0020	U	ug/L	P404244	
		MCPP	0.0020	UJ	ug/L	P404244	MS
		Naproxen	0.0080	U	ug/L	P404244	
		Primidone	0.0040	U	ug/L	P404244	
		Pyraclostrobin	0.0020	U	ug/L	P404244	
		Thiamethoxam	0.0020	UJ	ug/L	P404244	MS
		Tolfenpyrad	0.0020	U	ug/L	P404244	
		Triclopyr	0.0040	U	ug/L	P404244	

Ref. Method and Comment:

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

Sample Location: Yellow River below Malone Creek

Collection Date/Time: 09/22/2021 13:20

Field ID: G4NW0373

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277945	EPA 200.7 Rev. 4.4	Calcium	3.20		mg/L	P404252	
		Iron	980		ug/L	P404252	
		Magnesium	0.89		mg/L	P404252	
		Manganese	42.7		ug/L	P404252	
		Potassium	0.65	I	mg/L	P404252	
	EPA 200.8 Rev. 5.4	Sodium	1.8	I	mg/L	P404252	
		Zinc	5.0	U	ug/L	P404252	
		Aluminum	520		ug/L	P404252	
		Antimony	0.064	I	ug/L	P404252	
		Arsenic	0.49		ug/L	P404252	
		Barium	15.8		ug/L	P404252	
		Beryllium	0.046		ug/L	P404252	
		Boron**	11.2		ug/L	P404252	
		Cadmium	0.020	U	ug/L	P404252	
		Chromium	0.56	I	ug/L	P404252	
		Copper	0.40	U	ug/L	P404252	
		Lead	0.56		ug/L	P404421	
		Nickel	0.71	I	ug/L	P404252	
		Selenium	0.20	U	ug/L	P404252	
		Silver	0.010	U	ug/L	P404252	
		Thallium	0.10	U	ug/L	P404252	
	SM 2340B	Hardness	11.7		mg/L	P404252	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/29/2021.

Sample Location: Yellow River upstream of Miller Bluff Landing **Collection Date/Time: 09/22/2021 11:10**

Field ID: G4NW0534

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277934	EPA 180.1 Rev. 2.0	Turbidity	35		NTU	P404134	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P404317	
		Sulfate	0.90		mg SO4/L	P404319	
		Color (true)	140	J	PCU	P404136	
	SM 2320 B-2011	Total Alkalinity	5.8		mg CaCO3/L	P404566	
	SM 2540 C-2011	TDS	43		mg/L	P404249	
	SM 2540 D-2011	TSS	26		mg/L	P404238	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P404570	
2277935	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P404406	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P404217	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.085		mg N/L	P404265	
	EPA 365.1 Rev. 2.0	Total-P	0.042	J	mg P/L	P404297	MS
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P404343	
2277936	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P404125	
2277944	EPA 200.7 Rev. 4.4	Calcium	2.94		mg/L	P404252	
		Iron	1.11E+03		ug/L	P404252	
		Magnesium	0.85		mg/L	P404252	
		Manganese	51.5		ug/L	P404252	
		Potassium	0.64	I	mg/L	P404252	
		Sodium	1.9	I	mg/L	P404252	
		Zinc	5.0	U	ug/L	P404252	
	EPA 200.8 Rev. 5.4	Aluminum	814		ug/L	P404252	
		Antimony	0.053	I	ug/L	P404252	
		Arsenic	0.54		ug/L	P404252	
		Barium	16.2		ug/L	P404252	
		Beryllium	0.058		ug/L	P404252	
		Boron**	11.2		ug/L	P404252	
		Cadmium	0.022	I	ug/L	P404252	
		Chromium	0.83	I	ug/L	P404252	
		Copper	0.46	I	ug/L	P404252	
		Lead	0.88		ug/L	P404421	
		Nickel	0.50	U	ug/L	P404252	
		Selenium	0.20	U	ug/L	P404252	
		Silver	0.010	U	ug/L	P404252	
		Thallium	0.10	U	ug/L	P404252	
	SM 2340B	Hardness	10.8		mg/L	P404252	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2120 B-2011: The result may be biased high because of matrix interference.

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

EPA 365.1 Rev. 2.0: Total-P: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.8 Rev. 5.4: The lead result was confirmed on 09/28/2021.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P404134

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404252

Component	Result	Code	Units
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: P404252

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
Copper	0.40	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: P404421

Component	Result	Code	Units
Lead	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404317

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404319

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: P404406

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404217

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404265

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404297

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

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

Reference Method: EPA 8321B
Batch ID: P404096

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: P404244

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: P404244

Component	Result	Code	Units
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
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	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: SM 2120 B-2011

Batch ID: P404136

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P404566

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

Reference Method: SM 2540 C-2011

Batch ID: P404249

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P404238

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P404570

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P404343

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: P404252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	106		P	85 - 115
Magnesium	106		P	85 - 115
Manganese	101		P	85 - 115
Potassium	99.7		P	85 - 115
Sodium	104		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	106		P	80 - 120
Arsenic	104		P	85 - 115
Barium	104		P	80 - 120
Beryllium	101		P	80 - 120
Boron	101		P	80 - 120
Cadmium	103		P	85 - 115
Chromium	97.9		P	80 - 120
Copper	98.8		P	80 - 120
Nickel	98.9		P	80 - 120
Selenium	103		P	80 - 120
Silver	105		P	80 - 120
Thallium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404421

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	97.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404319

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P404406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404217

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404265

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: P404297

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P404096

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	88.7		P	40 - 150
AMPA	84.6		P	40 - 160
Endothall	64.0		P	40 - 150
Glufosinate	87.3		P	40 - 160
Glyphosate	81.8		P	40 - 160
Sucralose	96.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	98.0		P	40 - 150
2,4,5-T	110		P	40 - 150
Acetaminophen	77.8		P	30 - 150
Acetamiprid	86.7		P	40 - 150
Afidopyropen	74.5		P	40 - 150
Bentazon	96.4		P	30 - 150
Benzovindiflupyr	87.5		P	40 - 150
Carbamazepine	87.9		P	40 - 150
Clothianidin	79.5		P	40 - 150
Dinotefuran	87.3		P	40 - 150
Diuron	76.7		P	40 - 150
Fenuron	88.9		P	40 - 150
Fluridone	82.5		P	40 - 150
Hydrocodone	90.9		P	40 - 150
Ibuprofen	82.1		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	93.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P404244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	83.0		P	40 - 150
Mandestrobin	83.2		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	99.4		P	40 - 150
Primidone	101		P	40 - 150
Pyraclostrobin	78.2		P	40 - 150
Thiamethoxam	93.0		P	40 - 150
Tolfenpyrad	47.7		P	30 - 150
Triclopyr	102		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P404136

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P404566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P404570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P404343

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	106		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277452	Calcium	106		P	80 - 120
2277452	Iron	110		P	80 - 120
2277452	Magnesium	110		P	80 - 120
2277452	Manganese	102		P	80 - 120
2277452	Potassium	107		P	80 - 120
2277452	Sodium	104		P	80 - 120
2277452	Zinc	103		P	80 - 120
2278063	Calcium	107	108	P/P	80 - 120
2278063	Iron	108	108	P/P	80 - 120
2278063	Magnesium	109	108	P/P	80 - 120
2278063	Manganese	101	104	P/P	80 - 120
2278063	Potassium	108	108	P/P	80 - 120
2278063	Sodium	104	106	P/P	80 - 120
2278063	Zinc	100	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277452	Aluminum	106		P	80 - 120
2277452	Antimony	106		P	80 - 120
2277452	Arsenic	96.5		P	80 - 120
2277452	Barium	105		P	80 - 120
2277452	Beryllium	97.9		P	80 - 120
2277452	Boron	106		P	80 - 120
2277452	Cadmium	98.0		P	80 - 120
2277452	Chromium	100		P	80 - 120
2277452	Copper	102		P	80 - 120
2277452	Nickel	98.9		P	80 - 120
2277452	Selenium	103		P	80 - 120
2277452	Silver	105		P	80 - 120
2277452	Thallium	103		P	80 - 120
2278063	Aluminum	103	99.0	P/P	80 - 120
2278063	Antimony	108	103	P/P	80 - 120
2278063	Arsenic	100	96.0	P/P	80 - 120
2278063	Barium	107	101	P/P	80 - 120
2278063	Beryllium	98.5	95.9	P/P	80 - 120
2278063	Boron	103	96.8	P/P	80 - 120
2278063	Cadmium	98.6	94.5	P/P	80 - 120
2278063	Chromium	99.7	96.8	P/P	80 - 120
2278063	Copper	91.8	88.8	P/P	80 - 120
2278063	Nickel	99.2	95.4	P/P	80 - 120
2278063	Selenium	104	101	P/P	80 - 120
2278063	Silver	106	101	P/P	80 - 120
2278063	Thallium	104	99.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278649	Lead	98.0	98.6	P/P	80 - 120
2278895	Lead	96.4		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277646	Chloride	103		P	90 - 110
2277863	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277646	Sulfate	105		P	90 - 110
2277863	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277901	Ammonia-N	96.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278045	Kjeldahl Nitrogen	93.9	93.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277913	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277935	Total-P	111	108	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277907	O-Phosphate-P	97.6	93.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P404096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277943	Acesulfame K	110	156	P/F	40 - 150
2277943	AMPA	89.0	90.9	P/P	40 - 160
2277943	Endothall	72.9	76.0	P/P	40 - 150
2277943	Glufosinate	92.6	92.7	P/P	40 - 160
2277943	Glyphosate	80.1	81.9	P/P	40 - 160
2277943	Sucralose	94.5	96.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P404244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277943	2,4-D	152	157	F/F	40 - 150
2277943	2,4,5-T	128	129	P/P	40 - 150
2277943	Acetaminophen	122	123	P/P	30 - 150
2277943	Acetamiprid	105	106	P/P	40 - 150
2277943	Afidopyropen	75.3	86.0	P/P	40 - 150
2277943	Bentazon	94.4	88.5	P/P	30 - 150
2277943	Benzovindiflupyr	87.9	82.7	P/P	40 - 150
2277943	Carbamazepine	111	119	P/P	40 - 150
2277943	Clothianidin	111	120	P/P	40 - 150
2277943	Dinotefuran	132	132	P/P	40 - 150
2277943	Diuron	93.7	85.4	P/P	40 - 150
2277943	Fenuron	98.0	92.7	P/P	40 - 150
2277943	Fluridone	83.9	84.5	P/P	40 - 150
2277943	Hydrocodone	117	104	P/P	40 - 150
2277943	Ibuprofen	88.2	69.0	P/P	40 - 150
2277943	Imazapyr	123	126	P/P	40 - 150
2277943	Imidacloprid	166	177	F/F	40 - 150
2277943	Linuron	73.5	84.0	P/P	40 - 150
2277943	Mandestrobin	95.7	95.5	P/P	40 - 150
2277943	MCCP	141	154	P/F	40 - 150
2277943	Naproxen	112	89.1	P/P	40 - 150
2277943	Primidone	115	139	P/P	40 - 150
2277943	Pyraclostrobin	81.9	84.0	P/P	40 - 150
2277943	Thiamethoxam	167	166	F/F	40 - 150
2277943	Tolfenpyrad	57.3	56.5	P/P	30 - 150
2277943	Triclopyr	115	132	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P404570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278044	Fluoride	98.2	98.2	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P404343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277929	Organic Carbon	107	107	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P404134

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277911	Turbidity	1.35	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404252

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278063	Calcium	0.393	Spike	P	0 - 20
2278063	Iron	0.261	Spike	P	0 - 20
2278063	Magnesium	0.700	Spike	P	0 - 20
2278063	Manganese	2.51	Spike	P	0 - 20
2278063	Potassium	0.492	Spike	P	0 - 20
2278063	Sodium	1.92	Spike	P	0 - 20
2278063	Zinc	3.85	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404252

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278063	Aluminum	3.90	Spike	P	0 - 20
2278063	Antimony	4.50	Spike	P	0 - 20
2278063	Arsenic	4.28	Spike	P	0 - 20
2278063	Barium	5.17	Spike	P	0 - 20
2278063	Beryllium	2.62	Spike	P	0 - 20
2278063	Boron	5.33	Spike	P	0 - 20
2278063	Cadmium	4.30	Spike	P	0 - 20
2278063	Chromium	2.93	Spike	P	0 - 20
2278063	Copper	3.11	Spike	P	0 - 20
2278063	Nickel	3.92	Spike	P	0 - 20
2278063	Selenium	2.51	Spike	P	0 - 20
2278063	Silver	4.52	Spike	P	0 - 20
2278063	Thallium	4.69	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404421

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278649	Lead	0.542	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404317

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277646	Chloride	0.863	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P404406

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277901	Ammonia-N	0.930	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P404217

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278045	Kjeldahl Nitrogen	0.600	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P404265

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277913	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P404297

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277935	Total-P	2.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P404125

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277907	O-Phosphate-P	3.86	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P404096

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277943	Acesulfame K	34.9	Spike	F	0 - 30
2277943	AMPA	2.15	Spike	P	0 - 30
2277943	Endothall	4.09	Spike	P	0 - 30
2277943	Glufosinate	0.114	Spike	P	0 - 30
2277943	Glyphosate	2.22	Spike	P	0 - 30
2277943	Sucralose	2.13	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P404244

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277943	2,4-D	3.02	Spike	P	0 - 30
2277943	2,4,5-T	0.588	Spike	P	0 - 30
2277943	Acetaminophen	0.885	Spike	P	0 - 30
2277943	Acetamidrid	1.65	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P404244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277943	Afidopyropen	13.3	Spike	P	0 - 30
2277943	Bentazon	6.47	Spike	P	0 - 30
2277943	Benzovindiflupyr	6.08	Spike	P	0 - 30
2277943	Carbamazepine	6.75	Spike	P	0 - 30
2277943	Clothianidin	7.96	Spike	P	0 - 30
2277943	Dinotefuran	0.175	Spike	P	0 - 30
2277943	Diuron	9.19	Spike	P	0 - 30
2277943	Fenuron	5.58	Spike	P	0 - 30
2277943	Fluridone	0.681	Spike	P	0 - 30
2277943	Hydrocodone	11.1	Spike	P	0 - 30
2277943	Ibuprofen	24.4	Spike	P	0 - 30
2277943	Imazapyr	1.72	Spike	P	0 - 30
2277943	Imidacloprid	6.11	Spike	P	0 - 30
2277943	Linuron	13.4	Spike	P	0 - 30
2277943	Mandestrobin	0.222	Spike	P	0 - 30
2277943	MCCP	8.82	Spike	P	0 - 30
2277943	Naproxen	23.2	Spike	P	0 - 30
2277943	Primidone	18.9	Spike	P	0 - 30
2277943	Pyraclostrobin	2.52	Spike	P	0 - 30
2277943	Thiamethoxam	0.807	Spike	P	0 - 30
2277943	Tolfenpyrad	1.34	Spike	P	0 - 30
2277943	Triclopyr	13.2	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P404136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277928	Color (true)	0.881	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P404566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278044	Total Alkalinity	1.83	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P404249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278044	TDS	2.86	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P404570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278044	Fluoride	0.0	Spike	P	0 - 2.1

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P404343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277929	Organic Carbon	0.301	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2277943

Field Sample ID: G4NW0526

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	122	P	30 - 160
EPA 8321B	Diuron-d6	91.7	P	30 - 160
EPA 8321B	Endothall-d6	78.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.2	P	30 - 160
EPA 8321B	Primidone-d5	70.0	P	30 - 160
EPA 8321B	Sucralose-d6	84.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107962

Included Lab Sample IDs: 2277936

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107968

Included Lab Sample IDs: 2277934

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

Reference Method: SM 2120 B-2011

Run ID: A107969

Included Lab Sample IDs: 2277934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.9	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A107979

Included Lab Sample IDs: 2277943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	82.1	95.2	P/P	60 - 160
Glufosinate	89.3	96.9	P/P	60 - 160
Glyphosate	88.6	93.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A107990

Included Lab Sample IDs: 2277943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	91.2	82.7	P/P	60 - 160
Endothall	64.4	68.2	P/P	60 - 160
Sucralose	87.6	89.0	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108024

Included Lab Sample IDs: 2277934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	101	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108029

Included Lab Sample IDs: 2277935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A108043
Included Lab Sample IDs: 2277943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	110	P/P	50 - 150
2,4,5-T	111	93.6	P/P	50 - 150
Acetaminophen	108	97.9	P/P	60 - 160
Acetamiprid	102	111	P/P	50 - 150
Afidopyropen	103	112	P/P	50 - 150
Bentazon	113	111	P/P	50 - 160
Benzovindiflupyr	110	108	P/P	50 - 150
Carbamazepine	109	108	P/P	60 - 150
Clothianidin	116	102	P/P	60 - 150
Dinotefuran	107	102	P/P	50 - 150
Diuron	93.0	102	P/P	60 - 160
Fenuron	98.9	104	P/P	60 - 150
Fluridone	95.9	99.2	P/P	60 - 160
Hydrocodone	112	105	P/P	60 - 150
Ibuprofen	142	123	P/P	50 - 160
Imazapyr	69.0	77.5	P/P	50 - 150
Imidacloprid	100	99.4	P/P	60 - 150
Linuron	108	102	P/P	60 - 150
Mandestrobin	108	109	P/P	50 - 150
MCPP	106	99.9	P/P	50 - 150
Naproxen	74.7	109	P/P	50 - 160
Primidone	110	135	P/P	60 - 150
Pyraclostrobin	105	101	P/P	60 - 150
Thiamethoxam	108	97.7	P/P	50 - 150
Tolfenpyrad	102	95.9	P/P	60 - 150
Triclopyr	89.4	104	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A108048
Included Lab Sample IDs: 2277944, 2277945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Antimony	108	107	P/P	90 - 110
Barium	102	101	P/P	90 - 110
Beryllium	99.2	96.7	P/P	90 - 110
Boron	102	104	P/P	90 - 110
Chromium	98.7	98.2	P/P	90 - 110
Copper	98.3	96.8	P/P	90 - 110
Nickel	97.9	96.4	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A108054
Included Lab Sample IDs: 2277935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A108055

Included Lab Sample IDs: 2277935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	105	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108062

Included Lab Sample IDs: 2277944, 2277945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	101	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Manganese	102	103	P/P	90 - 110
Potassium	98.5	99.5	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108068

Included Lab Sample IDs: 2277944, 2277945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	98.1	P/P	90 - 110
Cadmium	102	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108075

Included Lab Sample IDs: 2277935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108078

Included Lab Sample IDs: 2277935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108124

Included Lab Sample IDs: 2277944, 2277945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	95.5	93.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108145

Included Lab Sample IDs: 2277934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.9	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A108145

Included Lab Sample IDs: 2277934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	102	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						1.35	
EPA 200.7 Rev. 4.4	Calcium	104	106	107	108			0.393
	Iron	106	110	108	108			0.261
	Magnesium	106	110	109	108			0.700
	Manganese	101	102	101	104			2.51
	Potassium	99.7	107	108	108			0.492
	Sodium	104	104	104	106			1.92
	Zinc	99.6	103	100	104			3.85
EPA 200.8 Rev. 5.4	Aluminum	102	103	99.0	106			3.90
	Antimony	106	108	103	106			4.50
	Arsenic	104	100	96.0	96.5			4.28
	Barium	104	107	101	105			5.17
	Beryllium	101	98.5	95.9	97.9			2.62
	Boron	101	103	96.8	106			5.33
	Cadmium	103	98.6	94.5	98.0			4.30
	Chromium	97.9	100	99.7	96.8			2.93
	Copper	98.8	91.8	88.8	102			3.11
	Lead	97.0	98.0	98.6	96.4			0.542
	Nickel	98.9	99.2	95.4	98.9			3.92
	Selenium	103	104	101	103			2.51
	Silver	105	106	101	105			4.52
	Thallium	102	104	99.6	103			4.69
EPA 300.0 Rev. 2.1	Chloride	99.3	103	102			0.863	
	Sulfate	99.4	105	102				
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	96.0	97.0				0.930
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.6	93.9	93.3				0.600
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	103				0.0
EPA 365.1 Rev. 2.0	Total-P	106	111	108				2.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	97.6	93.9				3.86
EPA 8321B	2,4-D	98.0	152	157				3.02
	2,4,5-T	110	128	129				0.588
	Acesulfame K	88.7	110	156				34.9
	Acetaminophen	77.8	122	123				0.885
	Acetamiprid	86.7	105	106				1.65
	Afidopyropen	74.5	75.3	86.0				13.3
	AMPA	84.6	89.0	90.9				2.15
	Bentazon	96.4	94.4	88.5				6.47
	Benzovindiflupyr	87.5	87.9	82.7				6.08
	Carbamazepine	87.9	111	119				6.75
	Clothianidin	79.5	111	120				7.96
	Dinotefuran	87.3	132	132				0.175
	Diuron	76.7	93.7	85.4				9.19
	Endothall	64.0	72.9	76.0				4.09
	Fenuron	88.9	98.0	92.7				5.58
	Fluridone	82.5	83.9	84.5				0.681
	Glufosinate	87.3	92.6	92.7				0.114
	Glyphosate	81.8	80.1	81.9				2.22
	Hydrocodone	90.9	117	104				11.1
	Ibuprofen	82.1	88.2	69.0				24.4
	Imazapyr	86.4	123	126				1.72
	Imidacloprid	93.2	166	177				6.11
	Linuron	83.0	73.5	84.0				13.4
	Mandestrobin	83.2	95.7	95.5				0.222
	MCPP	113	141	154				8.82

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 8321B	Naproxen	99.4	112	89.1			23.2
	Primidone	101	115	139			18.9
	Pyraclostrobin	78.2	81.9	84.0			2.52
	Sucralose	96.6	96.6	94.5			2.13
	Thiamethoxam	93.0	167	166			0.807
	Tolfenpyrad	47.7	57.3	56.5			1.34
	Triclopyr	102	115	132			13.2
SM 2120 B-2011	Color (true)	98.3				0.881	
SM 2320 B-2011	Total Alkalinity	98.2				1.83	
SM 2540 C-2011	TDS					2.86	
SM 4500 F-C-2011	Fluoride	101	98.2	98.2			0.0
SM 5310 B-2011	Organic Carbon	106	107	107			0.301

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2277934
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2277944, 2277945
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2277944, 2277945
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2277934
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2277934
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2277935
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2277935
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2277935
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2277935
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2277936
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2277943
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2277934
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2277934
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2277944, 2277945
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2277934
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2277934
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2277934
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2277935

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	09/23/2021			09/23/2021 14:36	Khloe J Berg	2277934
EPA 200.7 Rev. 4.4	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 17:59	Josef B Mick	2277944
	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 18:05	Josef B Mick	2277945
EPA 200.8 Rev. 5.4	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/28/2021 19:03	McKinley C Carter	2277944
	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/28/2021 19:12	McKinley C Carter	2277945
	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 19:07	McKinley C Carter	2277944
	09/23/2021	09/28/2021 10:40	Emily M Philpot	09/29/2021 19:13	McKinley C Carter	2277945
	09/23/2021	10/01/2021 10:00	Emily M Philpot	10/01/2021 23:02	McKinley C Carter	2277944
	09/23/2021	10/01/2021 10:00	Emily M Philpot	10/01/2021 23:11	McKinley C Carter	2277945
EPA 300.0 Rev. 2.1	09/23/2021			09/28/2021 18:55	Roberta Tatti	2277934
EPA 350.1 Rev. 2.0	09/23/2021			09/30/2021 12:55	Ping Hua	2277935
EPA 351.2 Rev. 2.0	09/23/2021	09/27/2021 11:20	Benjamin T. Nordmann	09/29/2021 10:01	Alexandra J Mattheus	2277935
EPA 353.2 Rev. 2.0	09/23/2021			09/28/2021 09:41	Beverly Y. Sanders	2277935
EPA 365.1 Rev. 2.0	09/23/2021	09/28/2021 14:14	Simonne.V. Calhoun	09/30/2021 12:03	Lipi Saha	2277935
EPA 365.1 Rev. 2.0 dissolved	09/23/2021			09/23/2021 14:26	James L Waggeberby	2277936
EPA 8321B	09/23/2021	09/24/2021 08:00	Juyoung Kim	09/24/2021 09:46	Juyoung Kim	2277943
	09/23/2021	09/24/2021 08:00	Juyoung Kim	09/24/2021 21:54	Manjita Shrestha	2277943
	09/23/2021	09/28/2021 12:00	Hoor Shaik	09/29/2021 02:00	Juyoung Kim	2277943
SM 2120 B-2011	09/23/2021			09/23/2021 15:17	Madeline Gruver	2277934
SM 2320 B-2011	09/23/2021			10/02/2021 01:28	Dale L. Simmons	2277934
SM 2340B	09/23/2021			09/29/2021 17:59	Josef B Mick	2277944
	09/23/2021			09/29/2021 18:05	Josef B Mick	2277945
SM 2540 C-2011	09/23/2021			09/24/2021 11:35	Simonne.V. Calhoun	2277934
SM 2540 D-2011	09/23/2021			09/24/2021 11:35	Simonne.V. Calhoun	2277934
SM 4500 F-C-2011	09/23/2021			10/02/2021 01:28	Dale L. Simmons	2277934
SM 5310 B-2011	09/23/2021			09/28/2021 09:51	Khloe J Berg	2277935