

Chemical Analysis Report

NW-DIST-2020-08-06-02

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

Event Description: **Escambia River Run**
Request ID: **RQ-2020-08-03-47**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Certified by: Colin Wright, Program Administrator

Date Certified: 28-AUG-2020 10:53

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned on a light-colored 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: Escambia River

Collection Date/Time: 08/05/2020 10:15

Field ID: G4NW0405

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189054	EPA 8321B	2,4-D	0.0075	I	ug/L	P385828	
		Acesulfame K**	0.10	U	ug/L	P385723	
		AMPA**	0.10	U	ug/L	P385723	
		Sucralose**	0.11		ug/L	P385723	
		Acetaminophen**	0.0080	U	ug/L	P385828	
		Acetamiprid**	0.0020	U	ug/L	P385828	
		Endothall**	0.25	U	ug/L	P385723	
		Glufosinate**	0.10	U	ug/L	P385723	
		Glyphosate**	0.10	U	ug/L	P385723	
		Afidopyropen**	0.0020	U	ug/L	P385828	
		Bentazon	8.0E-04	U	ug/L	P385828	
		Benzovindiflupyr**	0.0020	U	ug/L	P385828	
		Carbamazepine**	8.0E-04	U	ug/L	P385828	
		Clothianidin**	0.0020	U	ug/L	P385828	
		Dinotefuran**	0.0020	U	ug/L	P385828	
		Diuron	0.0020	U	ug/L	P385828	
		Fenuron	0.016	U	ug/L	P385828	
		Fluridone**	8.0E-04	U	ug/L	P385828	
		Imazapyr**	0.10		ug/L	P385828	
		Hydrocodone**	0.0020	U	ug/L	P385828	
		Ibuprofen**	0.020	U	ug/L	P385828	
		Imidacloprid	0.0020	U	ug/L	P385828	
		Linuron	0.0040	U	ug/L	P385828	
		Mandestrobin**	0.0020	U	ug/L	P385828	
		MCPP	0.0020	U	ug/L	P385828	
		Naproxen**	0.0080	U	ug/L	P385828	
		Primidone**	0.0040	U	ug/L	P385828	
		Pyraclostrobin**	0.0020	U	ug/L	P385828	
		Thiamethoxam**	0.0020	U	ug/L	P385828	
		Tolfenpyrad**	0.0020	U	ug/L	P385828	
		Triclopyr**	0.0040	U	ug/L	P385828	

Sample Location: Escambia River upstream Gulf Power Discharge

Collection Date/Time: 08/05/2020 11:00

Field ID: G4NW0264

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189044	EPA 180.1 Rev. 2.0	Turbidity	9.0		NTU	P385744	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P385891	
		Sulfate	11		mg SO4/L	P385896	
		Color (true)	56		PCU	P385746	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P385857	
	SM 2540 C-2011	TDS	135		mg/L	P386384	
	SM 2540 D-2011	TSS	2	UJ	mg/L	P385853	
	SM 4500 F-C-2011	Fluoride	0.036	I	mg F/L	P385837	
2189045	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P386128	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P385881	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P385767	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P385868	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P385884	
2189046	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P385740	
2189056	EPA 200.7 Rev. 4.4	Barium	29.8		ug/L	P385736	
		Calcium	10.9		mg/L	P385736	
		Iron	1.05E+03		ug/L	P385736	
		Magnesium	3.92		mg/L	P385736	
		Potassium	1.9		mg/L	P385736	
		Sodium	28.6		mg/L	P385736	
		Zinc	5.0	U	ug/L	P385736	
	EPA 200.8 Rev. 5.4	Aluminum	245		ug/L	P385736	
		Antimony	0.050	U	ug/L	P385736	
		Arsenic	0.77		ug/L	P385736	
		Boron**	24.7		ug/L	P385736	
		Cadmium	0.020	U	ug/L	P385736	
		Chromium	0.71	I	ug/L	P385736	
		Copper	0.53	I	ug/L	P385736	
		Lead	0.34	I	ug/L	P385736	
		Nickel	0.72	I	ug/L	P385736	
		Selenium	0.20	U	ug/L	P385736	
		Silver	0.010	U	ug/L	P385736	
		Thallium	0.10	U	ug/L	P385736	
		Hardness	43.3		mg/L	P385736	
	SM 2340B						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The recovery of the QC standard was outside of the acceptable limit.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Escambia River Upstream Gulf Power

Collection Date/Time: 08/05/2020 11:57

Field ID: FB_08052020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189047	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P385744	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P385891	
		Sulfate	0.20	U	mg SO4/L	P385896	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P385746	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P385857	
	SM 2540 C-2011	TDS	15	U	mg/L	P386384	
	SM 2540 D-2011	TSS	2	UJ	mg/L	P385853	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P385837	
2189048	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P386101	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P385882	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385766	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P385868	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P385884	
2189049	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385740	
2189055	EPA 8321B	2,4-D	0.0020	U	ug/L	P385828	
		Acesulfame K**	0.10	U	ug/L	P385723	
		AMPA**	0.10	U	ug/L	P385723	
		Sucralose**	0.010	U	ug/L	P385723	
		Acetaminophen**	0.0080	U	ug/L	P385828	
		Acetamiprid**	0.0020	U	ug/L	P385828	
		Endothall**	0.25	U	ug/L	P385723	
		Glufosinate**	0.10	U	ug/L	P385723	
		Glyphosate**	0.10	U	ug/L	P385723	
		Afidopyropen**	0.0020	U	ug/L	P385828	
		Bentazon	8.0E-04	U	ug/L	P385828	
		Benzovindiflupyr**	0.0020	U	ug/L	P385828	
		Carbamazepine**	8.0E-04	U	ug/L	P385828	
		Clothianidin**	0.0020	U	ug/L	P385828	
		Dinotefuran**	0.0020	U	ug/L	P385828	
		Diuron	0.0020	U	ug/L	P385828	
		Fenuron	0.016	U	ug/L	P385828	
		Fluridone**	8.0E-04	U	ug/L	P385828	
		Imazapyr**	0.0040	U	ug/L	P385828	
		Hydrocodone**	0.0020	U	ug/L	P385828	
		Ibuprofen**	0.020	U	ug/L	P385828	
		Imidacloprid	0.0020	U	ug/L	P385828	
		Linuron	0.0040	U	ug/L	P385828	
		Mandestrobin**	0.0020	U	ug/L	P385828	
		MCP	0.0020	U	ug/L	P385828	
		Naproxen**	0.0080	U	ug/L	P385828	
		Primidone**	0.0040	U	ug/L	P385828	
		Pyraclostrobin**	0.0020	U	ug/L	P385828	
		Thiamethoxam**	0.0020	U	ug/L	P385828	

Field ID: FB_08052020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189055	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P385828	
		Triclopyr**	0.0040	U	ug/L	P385828	
2189057	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P385736	
		Calcium	0.075	U	mg/L	P385736	
		Iron	30	U	ug/L	P385736	
		Magnesium	0.040	U	mg/L	P385736	
		Potassium	0.30	U	mg/L	P385736	
		Sodium	0.50	U	mg/L	P385736	
		Zinc	5.0	U	ug/L	P385736	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P385736	
		Antimony	0.050	U	ug/L	P385736	
		Arsenic	0.050	U	ug/L	P385736	
		Boron**	2.0	U	ug/L	P385736	
		Cadmium	0.020	U	ug/L	P385736	
		Chromium	0.40	U	ug/L	P385736	
		Copper	0.43	I	ug/L	P385736	
		Lead	0.20	U	ug/L	P385736	
		Nickel	0.50	U	ug/L	P385736	
		Selenium	0.20	U	ug/L	P385736	
		Silver	0.010	U	ug/L	P385736	
		Thallium	0.10	U	ug/L	P385736	
	SM 2340B	Hardness	0.35	U	mg/L	P385736	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The recovery of the QC standard was outside of the acceptable limit.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 08/09/2020.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385744

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385736

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
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: P385736

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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 300.0 Rev. 2.1
Batch ID: P385891

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385896

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386101

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386128

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385881

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385882

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385766

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385767

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385868

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385740

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

Reference Method: EPA 8321B
Batch ID: P385723

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385828

Component	Result	Code	Units
2,4-D	0.0020	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
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: SM 2120 B-2011
Batch ID: P385746

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385857

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

Reference Method: SM 2540 C-2011
Batch ID: P386384

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385853

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P385837

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385884

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: P385736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	104		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	100		P	85 - 115
Sodium	98.1		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.8		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	101		P	85 - 115
Boron	104		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	102		P	85 - 115
Copper	98.1		P	85 - 115
Lead	105		P	85 - 115
Nickel	98.3		P	85 - 115
Selenium	99.3		P	85 - 115
Silver	110		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385891

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385896

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386101

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385881

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385882

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385766

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385767

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385868

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385740

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

Reference Method: EPA 8321B
Batch ID: P385723

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	95.9		P	40 - 150
Endothall	97.0		P	40 - 150
Glufosinate	82.7		P	40 - 150
Glyphosate	79.2		P	40 - 140
Sucralose	97.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P385828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	71.5		P	30 - 160
Acetamiprid	70.2		P	30 - 160
Afidopyropen	55.5		P	30 - 160
Bentazon	67.4		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	84.5		P	30 - 160
Carbamazepine	54.6		P	30 - 160
Clothianidin	67.8		P	30 - 160
Dinotefuran	92.3		P	30 - 160
Diuron	51.4		P	30 - 160
Fenuron	101		P	30 - 160
Fluridone	82.7		P	30 - 160
Hydrocodone	90.0		P	30 - 160
Ibuprofen	66.5		P	30 - 160
Imazapyr	73.8		P	30 - 160
Imidacloprid	88.8		P	30 - 160
Linuron	65.7		P	30 - 160
Mandestrobin	94.7		P	30 - 160
MCPP	107		P	30 - 160
Naproxen	76.6		P	30 - 160
Primidone	67.5		P	30 - 160
Pyraclostrobin	79.9		P	30 - 160
Thiamethoxam	56.4		P	30 - 160
Tolfenpyrad	48.2		P	30 - 160
Triclopyr	86.5		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P385746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P385857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385884

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189012	Barium	106	104	P/P	80 - 120
2189012	Calcium	105	105	P/P	80 - 120
2189012	Iron	105	101	P/P	80 - 120
2189012	Magnesium	104	101	P/P	80 - 120
2189012	Potassium	101	98.6	P/P	80 - 120
2189012	Sodium	97.7	101	P/P	80 - 120
2189012	Zinc	109	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189012	Aluminum	100	99.2	P/P	80 - 120
2189012	Antimony	103	104	P/P	80 - 120
2189012	Arsenic	101	100	P/P	80 - 120
2189012	Boron	103	102	P/P	80 - 120
2189012	Cadmium	99.3	101	P/P	80 - 120
2189012	Chromium	103	102	P/P	80 - 120
2189012	Copper	98.9	99.5	P/P	80 - 120
2189012	Lead	105	105	P/P	80 - 120
2189012	Nickel	97.4	97.2	P/P	80 - 120
2189012	Selenium	97.6	98.5	P/P	80 - 120
2189012	Silver	109	109	P/P	80 - 120
2189012	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188987	Chloride	102		P	90 - 110
2189101	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188987	Sulfate	103		P	90 - 110
2189101	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190195	Ammonia-N	100	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188991	Ammonia-N	100	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P385881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189045	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P385882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189138	Kjeldahl Nitrogen	100	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P385766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189025	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P385767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189045	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P385740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189046	O-Phosphate-P	98.6	99.1	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P385723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189008	Acesulfame K	119	117	P/P	40 - 150
2189008	AMPA	115	115	P/P	40 - 150
2189008	Endothall	111	112	P/P	40 - 150
2189008	Glufosinate	93.3	92.3	P/P	40 - 150
2189008	Glyphosate	64.6	75.0	P/P	40 - 140
2189008	Sucralose	59.2	57.1	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P385828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189009	2,4-D	119	111	P/P	30 - 160
2189009	Acetaminophen	89.0	82.7	P/P	30 - 160
2189009	Acetamiprid	67.6	66.7	P/P	30 - 160
2189009	Afidopyropen	51.2	47.7	P/P	30 - 160
2189009	Bentazon	61.9	49.0	P/P	30 - 160
2189009	Benzovindiflupyr	75.5	73.5	P/P	30 - 160
2189009	Carbamazepine	49.2	47.9	P/P	30 - 160
2189009	Clothianidin	59.5	60.9	P/P	30 - 160
2189009	Dinotefuran	89.2	91.0	P/P	30 - 160
2189009	Diuron	44.6	43.1	P/P	30 - 160
2189009	Fenuron	89.9	88.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189009	Fluridone	79.9	77.8	P/P	30 - 160
2189009	Hydrocodone	84.7	88.7	P/P	30 - 160
2189009	Ibuprofen	63.6	58.2	P/P	30 - 160
2189009	Imazapyr	95.3	76.6	P/P	30 - 160
2189009	Imidacloprid	96.4	101	P/P	30 - 160
2189009	Linuron	61.6	55.7	P/P	30 - 160
2189009	Mandestrobin	78.4	79.6	P/P	30 - 160
2189009	MCPP	99.0	97.1	P/P	30 - 160
2189009	Naproxen	61.1	59.5	P/P	30 - 160
2189009	Primidone	65.4	66.6	P/P	30 - 160
2189009	Pyraclostrobin	70.5	73.2	P/P	30 - 160
2189009	Thiamethoxam	77.0	80.7	P/P	30 - 160
2189009	Tolfenpyrad	45.0	45.0	P/P	30 - 160
2189009	Triclopyr	86.0	91.3	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P385837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189089	Fluoride	100	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189164	Organic Carbon	100	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188990	Turbidity	4.61	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189012	Barium	1.60	Spike	P	0 - 20
2189012	Calcium	0.0287	Spike	P	0 - 20
2189012	Iron	3.45	Spike	P	0 - 20
2189012	Magnesium	2.15	Spike	P	0 - 20
2189012	Potassium	2.17	Spike	P	0 - 20
2189012	Sodium	1.94	Spike	P	0 - 20
2189012	Zinc	1.49	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189012	Aluminum	1.08	Spike	P	0 - 20
2189012	Antimony	1.14	Spike	P	0 - 20
2189012	Arsenic	0.413	Spike	P	0 - 20
2189012	Boron	0.384	Spike	P	0 - 20
2189012	Cadmium	1.43	Spike	P	0 - 20
2189012	Chromium	0.316	Spike	P	0 - 20
2189012	Copper	0.664	Spike	P	0 - 20
2189012	Lead	0.439	Spike	P	0 - 20
2189012	Nickel	0.264	Spike	P	0 - 20
2189012	Selenium	0.868	Spike	P	0 - 20
2189012	Silver	0.659	Spike	P	0 - 20
2189012	Thallium	1.06	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188987	Chloride	0.277	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188987	Sulfate	0.935	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190195	Ammonia-N	4.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188991	Ammonia-N	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189045	Kjeldahl Nitrogen	2.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189138	Kjeldahl Nitrogen	3.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189025	NO2NO3-N	0.275	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189045	NO2NO3-N	0.222	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189028	Total-P	0.671	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189046	O-Phosphate-P	0.461	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189008	Acesulfame K	1.30	Spike	P	0 - 30
2189008	AMPA	0.419	Spike	P	0 - 30
2189008	Endothall	1.08	Spike	P	0 - 30
2189008	Glufosinate	1.05	Spike	P	0 - 30
2189008	Glyphosate	14.9	Spike	P	0 - 30
2189008	Sucralose	3.50	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189009	2,4-D	6.43	Spike	P	0 - 30
2189009	Acetaminophen	7.34	Spike	P	0 - 30
2189009	Acetamiprid	1.28	Spike	P	0 - 30
2189009	Afidopyropen	7.00	Spike	P	0 - 30
2189009	Bentazon	15.8	Spike	P	0 - 30
2189009	Benzovindiflupyr	2.65	Spike	P	0 - 30
2189009	Carbamazepine	2.77	Spike	P	0 - 30
2189009	Clothianidin	2.34	Spike	P	0 - 30
2189009	Dinotefuran	1.95	Spike	P	0 - 30
2189009	Diuron	3.51	Spike	P	0 - 30
2189009	Fenuron	1.60	Spike	P	0 - 30
2189009	Fluridone	2.67	Spike	P	0 - 30
2189009	Hydrocodone	4.56	Spike	P	0 - 30
2189009	Ibuprofen	8.90	Spike	P	0 - 30
2189009	Imazapyr	21.8	Spike	P	0 - 30
2189009	Imidacloprid	4.46	Spike	P	0 - 30
2189009	Linuron	10.1	Spike	P	0 - 30
2189009	Mandestrobin	1.53	Spike	P	0 - 30
2189009	MCP	1.98	Spike	P	0 - 30
2189009	Naproxen	2.62	Spike	P	0 - 30
2189009	Primidone	1.82	Spike	P	0 - 30
2189009	Pyraclostrobin	3.79	Spike	P	0 - 30
2189009	Thiamethoxam	4.72	Spike	P	0 - 30
2189009	Tolfenpyrad	0.0506	Spike	P	0 - 30
2189009	Triclopyr	5.89	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P385746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188993	Color (true)	1.65	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189215	Total Alkalinity	1.18	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P386384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189027	TDS	2.43	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189089	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189164	Organic Carbon	1.72	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2189054
Field Sample ID: G4NW0405

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	46.8	P	30 - 160
EPA 8321B	Diuron-d6	54.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.3	P	30 - 160
EPA 8321B	Primidone-d5	74.1	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160

Lab Sample ID: 2189055
Field Sample ID: FB_08052020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	53.1	P	30 - 160
EPA 8321B	Diuron-d6	64.2	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.4	P	30 - 160
EPA 8321B	Primidone-d5	64.9	P	30 - 160
EPA 8321B	Sucralose-d6	99.8	P	30 - 160
EPA 8321B	Sucralose-d6	99.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: 100407

Included Lab Sample IDs: 2189054, 2189055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.5	104	P/P	50 - 150
Acetaminophen	123	131	P/P	60 - 160
Acetamiprid	102	123	P/P	50 - 150
Afidopyropen	97.5	107	P/P	50 - 150
Bentazon	138	77.6	P/P	50 - 160
Benzovindiflupyr	118	119	P/P	50 - 150
Carbamazepine	111	111	P/P	60 - 150
Clothianidin	115	106	P/P	60 - 150
Dinotefuran	105	114	P/P	50 - 150
Diuron	111	108	P/P	60 - 160
Fenuron	118	126	P/P	60 - 150
Fluridone	113	111	P/P	60 - 160
Hydrocodone	134	127	P/P	60 - 150
Ibuprofen	72.5	80.9	P/P	50 - 160
Imazapyr	104	98.3	P/P	50 - 150
Imidacloprid	105	105	P/P	60 - 150
Linuron	121	118	P/P	60 - 150
Mandestrobin	118	110	P/P	50 - 150
MCPP	95.6	94.6	P/P	50 - 150
Naproxen	139	101	P/P	50 - 160
Primidone	92.8	97.6	P/P	60 - 150
Pyraclostrobin	113	103	P/P	60 - 150
Thiamethoxam	112	115	P/P	50 - 150
Tolfenpyrad	106	111	P/P	60 - 150
Triclopyr	88.0	90.9	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100321

Included Lab Sample IDs: 2189046, 2189049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100322

Included Lab Sample IDs: 2189044, 2189047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A100323

Included Lab Sample IDs: 2189044, 2189047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100340

Included Lab Sample IDs: 2189045, 2189048

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

Reference Method: EPA 8321B

Run ID: A100346

Included Lab Sample IDs: 2189054, 2189055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.7	104	P/P	60 - 160
Endothall	111	103	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100358

Included Lab Sample IDs: 2189056, 2189057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	106	106	P/P	90 - 110
Antimony	106	106	P/P	90 - 110
Arsenic	103	104	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Boron	106	107	P/P	90 - 110
Boron	107	107	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	103	104	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	104	105	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Nickel	103	102	P/P	90 - 110
Nickel	103	103	P/P	90 - 110
Selenium	103	103	P/P	90 - 110
Selenium	104	103	P/P	90 - 110
Thallium	101	99.7	P/P	90 - 110
Thallium	99.8	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100361

Included Lab Sample IDs: 2189056, 2189057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	101	P/P	90 - 110
Barium	102	102	P/P	90 - 110
Calcium	101	102	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.2	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100361

Included Lab Sample IDs: 2189056, 2189057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	99.7	99.2	P/P	90 - 110
Sodium	98.4	99.4	P/P	90 - 110
Sodium	99.7	98.4	P/P	90 - 110
Zinc	105	102	P/P	90 - 110
Zinc	105	105	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100371

Included Lab Sample IDs: 2189044, 2189047

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100376

Included Lab Sample IDs: 2189056, 2189057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.6	97.4	P/P	90 - 110
Aluminum	97.4	98.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100379

Included Lab Sample IDs: 2189044, 2189047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100385

Included Lab Sample IDs: 2189045, 2189048

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100386

Included Lab Sample IDs: 2189044, 2189047

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

Reference Method: EPA 8321B

Run ID: A100390

Included Lab Sample IDs: 2189054, 2189055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.0	101	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100391

Included Lab Sample IDs: 2189054, 2189055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	98.3	107	P/P	60 - 160
Glufosinate	91.3	100	P/P	60 - 160
Glyphosate	97.3	99.7	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100416

Included Lab Sample IDs: 2189045, 2189048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110
Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100422

Included Lab Sample IDs: 2189056, 2189057

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100427

Included Lab Sample IDs: 2189045, 2189048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100489

Included Lab Sample IDs: 2189048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100497

Included Lab Sample IDs: 2189045

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						4.61	
EPA 200.7 Rev. 4.4	Barium	101		106	104			1.60
	Calcium	104		105	105			0.0287
	Iron	102		105	101			3.45
	Magnesium	103		104	101			2.15
	Potassium	100		101	98.6			2.17
	Sodium	98.1		97.7	101			1.94
	Zinc	105		109	107			1.49
EPA 200.8 Rev. 5.4	Aluminum	99.8		100	99.2			1.08
	Antimony	103		103	104			1.14
	Arsenic	101		101	100			0.413
	Boron	104		103	102			0.384
	Cadmium	102		99.3	101			1.43
	Chromium	102		103	102			0.316
	Copper	98.1		98.9	99.5			0.664
	Lead	105		105	105			0.439
	Nickel	98.3		97.4	97.2			0.264
	Selenium	99.3		97.6	98.5			0.868
	Silver	110		109	109			0.659
	Thallium	101		101	102			1.06
EPA 300.0 Rev. 2.1	Chloride	103		102	103		0.277	
	Sulfate	104		103	104		0.935	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0		100	106			4.14
	Ammonia-N	97.4		100	98.8			1.30
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106		103	106			2.16
	Kjeldahl Nitrogen	106		100	95.4			3.01
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	105		99.5	100			0.275
	NO ₂ NO ₃ -N	104		101				0.222
EPA 365.1 Rev. 2.0	Total-P	101						0.671
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		98.6	99.1			0.461
EPA 8321B	2,4-D	115		119	111			6.43
	Acesulfame K	113		119	117			1.30
	Acetaminophen	71.5		89.0	82.7			7.34
	Acetamiprid	70.2		67.6	66.7			1.28
	Afidopyropen	55.5		51.2	47.7			7.00
	AMPA	95.9		115	115			0.419
	Bentazon	67.4		61.9	49.0			15.8
	Benzovindiflupyr	84.5		75.5	73.5			2.65
	Carbamazepine	54.6		49.2	47.9			2.77
	Clothianidin	67.8		59.5	60.9			2.34
	Dinotefuran	92.3		89.2	91.0			1.95
	Diuron	51.4		44.6	43.1			3.51
	Endothall	97.0		111	112			1.08
	Fenuron	101		89.9	88.5			1.60
	Fluridone	82.7		79.9	77.8			2.67
	Glufosinate	82.7		93.3	92.3			1.05
	Glyphosate	79.2		64.6	75.0			14.9
	Hydrocodone	90.0		84.7	88.7			4.56
	Ibuprofen	66.5		63.6	58.2			8.90
	Imazapyr	73.8		95.3	76.6			21.8
	Imidacloprid	88.8		96.4	101			4.46
	Linuron	65.7		61.6	55.7			10.1
	Mandestrobin	94.7		78.4	79.6			1.53
	MCPP	107		99.0	97.1			1.98

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	76.6	61.1	59.5		2.62
	Primidone	67.5	65.4	66.6		1.82
	Pyraclostrobin	79.9	70.5	73.2		3.79
	Sucralose	97.9	59.2	57.1		3.50
	Thiamethoxam	56.4	77.0	80.7		4.72
	Tolfenpyrad	48.2	45.0	45.0		0.0506
	Triclopyr	86.5	86.0	91.3		5.89
SM 2120 B-2011	Color (true)	102			1.65	
SM 2320 B-2011	Total Alkalinity	103			1.18	
SM 2540 C-2011	TDS				2.43	
SM 4500 F-C-2011	Fluoride	98.4	100	100		0.0
SM 5310 B-2011	Organic Carbon	102	100	102		1.72

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2189044, 2189047
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2189056, 2189057
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2189056, 2189057
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2189044, 2189047
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2189044, 2189047
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2189045, 2189048
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2189045, 2189048
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2189045, 2189048
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2189045, 2189048
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2189046, 2189049
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2189054, 2189055
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2189054, 2189055
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2189044, 2189047
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2189044, 2189047
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2189056, 2189057
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2189044, 2189047
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2189044, 2189047
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2189044, 2189047
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2189045, 2189048

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	08/06/2020			08/06/2020 16:18	Blanca Fach	2189044, 2189047
EPA 200.7 Rev. 4.4	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/07/2020 16:14	Betina Topolski	2189057
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/07/2020 18:26	Betina Topolski	2189056
EPA 200.8 Rev. 5.4	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/09/2020 17:19	Alexander Thompson	2189057
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/09/2020 19:20	Alexander Thompson	2189056
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/10/2020 14:00	Alexander Thompson	2189057
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/10/2020 15:17	Alexander Thompson	2189056
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/12/2020 16:17	Alexander Thompson	2189057
	08/06/2020	08/06/2020 16:25	Elliott D. Healy	08/12/2020 17:22	Alexander Thompson	2189056
EPA 300.0 Rev. 2.1	08/06/2020			08/08/2020 20:12	Julia Storbeck	2189044
	08/06/2020			08/08/2020 20:24	Julia Storbeck	2189047
EPA 350.1 Rev. 2.0	08/06/2020			08/12/2020 14:04	Virginia P. Brown	2189045
	08/06/2020			08/16/2020 15:35	Ping Hua	2189048
EPA 351.2 Rev. 2.0	08/06/2020	08/11/2020 08:40	Sima Feizi	08/12/2020 14:00	Jhamieka S. Greenwood	2189045
	08/06/2020	08/11/2020 08:40	Sima Feizi	08/12/2020 14:31	Jhamieka S. Greenwood	2189048
EPA 353.2 Rev. 2.0	08/06/2020			08/07/2020 10:23	Beverly Y. Sanders	2189048
	08/06/2020			08/07/2020 10:30	Beverly Y. Sanders	2189045
EPA 365.1 Rev. 2.0	08/06/2020	08/11/2020 11:28	Yen Ta	08/13/2020 08:17	Lipi Saha	2189045
	08/06/2020	08/11/2020 11:28	Yen Ta	08/13/2020 08:18	Lipi Saha	2189048
EPA 365.1 Rev. 2.0 dissolved	08/06/2020			08/06/2020 15:59	Samantha Davila	2189046
	08/06/2020			08/06/2020 16:05	Samantha Davila	2189049
EPA 8321B	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/06/2020 15:27	Rebecca Ware	2189054
	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/06/2020 15:37	Rebecca Ware	2189055
	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/07/2020 12:51	Rebecca Ware	2189054
	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/07/2020 13:05	Rebecca Ware	2189055
	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/11/2020 06:34	Rebecca Ware	2189054
	08/06/2020	08/06/2020 13:00	Rebecca Ware	08/11/2020 06:46	Rebecca Ware	2189055
	08/06/2020	08/11/2020 09:00	Hoor Shaik	08/12/2020 15:36	Juyoung Kim	2189054
	08/06/2020	08/11/2020 09:00	Hoor Shaik	08/12/2020 16:11	Juyoung Kim	2189055
SM 2120 B-2011	08/06/2020			08/06/2020 16:11	Madeline Gruver	2189044
	08/06/2020			08/06/2020 16:12	Madeline Gruver	2189047
SM 2320 B-2011	08/06/2020			08/11/2020 00:18	Dale L. Simmons	2189047
	08/06/2020			08/11/2020 00:39	Dale L. Simmons	2189044
SM 2340B	08/06/2020			08/07/2020 16:14	Betina Topolski	2189057
	08/06/2020			08/07/2020 18:26	Betina Topolski	2189056
SM 2540 C-2011	08/06/2020			08/07/2020 17:33	Madeline Gruver	2189044, 2189047
SM 2540 D-2011	08/06/2020			08/07/2020 18:09	Madeline Gruver	2189044, 2189047
SM 4500 F-C-2011	08/06/2020			08/07/2020 21:09	Dale L. Simmons	2189044
	08/06/2020			08/07/2020 21:17	Dale L. Simmons	2189047
SM 5310 B-2011	08/06/2020			08/11/2020 04:36	David Boose	2189045

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	08/06/2020			08/11/2020 04:48	David Boose	2189048