

Chemical Analysis Report

TLH-ROC-2020-08-20-04

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

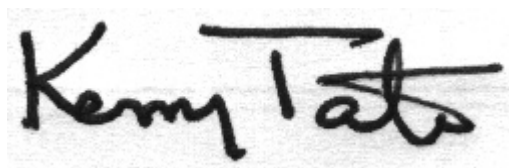
Event Description: **Run 3**
Request ID: **RQ-2020-03-02-46**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 10-SEP-2020 11:32

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: 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: Russ Mill Creek @ Union Rd

Collection Date/Time: 08/20/2020 10:30

Field ID: G2TLHR0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191609	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P386346	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P386939	
		Sulfate	1.5		mg SO4/L	P386941	
	SM 2120 B-2011	Color (true)	21		PCU	P386354	
	SM 2320 B-2011	Total Alkalinity	135		mg CaCO3/L	P386666	
	SM 2540 C-2011	TDS	162		mg/L	P386744	
	SM 2540 D-2011	TSS	8	I	mg/L	P386577	
	SM 4500 F-C-2011	Fluoride	0.064	I	mg F/L	P386459	
2191610	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P386443	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P386518	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P386475	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P386469	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P386549	
2191611	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P386425	
2191614	EPA 8321B	2,4-D	0.0020	U	ug/L	P386310	
		Acesulfame K**	0.10	U	ug/L	P386464	MS
		AMPA**	0.10	U	ug/L	P386464	
		Sucralose**	0.010	U	ug/L	P386464	
		Acetaminophen**	0.0080	U	ug/L	P386310	
		Acetamiprid**	0.0020	U	ug/L	P386310	
		Endothall**	0.25	U	ug/L	P386464	
		Glufosinate**	0.10	U	ug/L	P386464	
		Glyphosate**	0.10	U	ug/L	P386464	
		Afidopyropen**	0.0020	U	ug/L	P386310	
		Bentazon	8.0E-04	U	ug/L	P386310	
		Benzovindiflupyr**	0.0020	U	ug/L	P386310	
		Carbamazepine**	8.0E-04	U	ug/L	P386310	
		Clothianidin**	0.0020	U	ug/L	P386310	
		Dinotefuran**	0.0020	U	ug/L	P386310	
		Diuron	0.0020	U	ug/L	P386310	
		Fenuron	0.016	U	ug/L	P386310	MS
		Fluridone**	8.0E-04	U	ug/L	P386310	
		Imazapyr**	0.0040	U	ug/L	P386310	
		Hydrocodone**	0.0020	U	ug/L	P386310	
		Ibuprofen**	0.020	U	ug/L	P386310	
		Imidacloprid	0.0020	U	ug/L	P386310	
		Linuron	0.0040	U	ug/L	P386310	
		Mandestrobin**	0.0020	U	ug/L	P386310	
		MCP	0.0020	U	ug/L	P386310	
		Naproxen**	0.0080	U	ug/L	P386310	
		Primidone**	0.0040	U	ug/L	P386310	
		Pyraclostrobin**	0.0020	U	ug/L	P386310	
		Thiamethoxam**	0.0020	U	ug/L	P386310	

Field ID: G2TLHR0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2191614	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P386310	
		Triclopyr**	0.0040	U	ug/L	P386310	

Ref. Method and Comment:

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

EPA 8321B: MS accuracy for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386346

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386939

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386941

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386443

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386518

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386475

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386469

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386425

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

Reference Method: EPA 8321B
Batch ID: P386310

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P386310

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P386464

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: P386354

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P386666

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

Reference Method: SM 2540 C-2011
Batch ID: P386744

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P386577

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386459

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P386549

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386939

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P386443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P386518

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P386475

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: P386469

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: P386425

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

Reference Method: EPA 8321B
 Batch ID: P386310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	30 - 160
Acetaminophen	86.9		P	30 - 160
Acetamiprid	73.9		P	30 - 160
Afidopyropen	49.7		P	30 - 160
Bentazon	59.9		P	30 - 160
Benzovindiflupyr	75.2		P	30 - 160
Carbamazepine	64.7		P	30 - 160
Clothianidin	87.1		P	30 - 160
Dinotefuran	92.0		P	30 - 160
Diuron	54.7		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	87.7		P	30 - 160
Fluridone	92.4		P	30 - 160
Hydrocodone	84.2		P	30 - 160
Ibuprofen	82.4		P	30 - 160
Imazapyr	83.4		P	30 - 160
Imidacloprid	92.0		P	30 - 160
Linuron	65.2		P	30 - 160
Mandestrobin	81.1		P	30 - 160
MCPP	116		P	30 - 160
Naproxen	62.3		P	30 - 160
Primidone	83.2		P	30 - 160
Pyraclostrobin	67.9		P	30 - 160
Thiamethoxam	76.8		P	30 - 160
Tolfenpyrad	45.0		P	30 - 160
Triclopyr	89.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.6		P	40 - 150
AMPA	83.4		P	40 - 150
Endothall	83.4		P	40 - 150
Glufosinate	89.3		P	40 - 150
Glyphosate	77.4		P	40 - 140
Sucralose	99.9		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P386354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.0		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P386666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P386459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P386549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191533	Chloride	96.8		P	90 - 110
2191617	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191533	Sulfate	96.7		P	90 - 110
2191617	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191592	Ammonia-N	96.8	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191595	Kjeldahl Nitrogen	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191592	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191592	Total-P	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191593	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P386310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191176	2,4-D	103	103	P/P	30 - 160
2191176	Acetaminophen	90.9	88.1	P/P	30 - 160
2191176	Acetamiprid	69.8	64.9	P/P	30 - 160
2191176	Afidopyrophen	55.1	53.7	P/P	30 - 160
2191176	Bentazon	63.2	62.1	P/P	30 - 160
2191176	Benzovindiflupyr	73.0	69.7	P/P	30 - 160
2191176	Carbamazepine	57.7	57.0	P/P	30 - 160
2191176	Clothianidin	82.9	79.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191176	Dinotefuran	94.0	97.8	P/P	30 - 160
2191176	Diuron	49.1	48.9	P/P	30 - 160
2191176	Fenuron	6.98	6.19	F/F	30 - 160
2191176	Hydrocodone	71.8	72.6	P/P	30 - 160
2191176	Ibuprofen	80.1	66.4	P/P	30 - 160
2191176	Imazapyr	64.9	91.5	P/P	30 - 160
2191176	Imidacloprid	144	127	P/P	30 - 160
2191176	Linuron	58.7	61.4	P/P	30 - 160
2191176	Mandestrobin	77.6	77.7	P/P	30 - 160
2191176	MCP	107	107	P/P	30 - 160
2191176	Naproxen	57.0	67.7	P/P	30 - 160
2191176	Primidone	91.0	86.9	P/P	30 - 160
2191176	Pyraclostrobin	75.2	68.9	P/P	30 - 160
2191176	Thiamethoxam	90.7	87.6	P/P	30 - 160
2191176	Tolfenpyrad	46.0	41.6	P/P	30 - 160
2191176	Triclopyr	102	95.8	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191762	Acesulfame K	36.9	37.9	F/F	40 - 150
2191762	AMPA	109	79.8	P/P	40 - 150
2191762	Endothall	83.5	81.7	P/P	40 - 150
2191762	Glufosinate	76.7	89.3	P/P	40 - 150
2191762	Glyphosate	73.9	82.5	P/P	40 - 140
2191762	Sucralose	61.8	53.2	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P386459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191591	Fluoride	101	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P386549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191508	Organic Carbon	97.1		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191489	Turbidity	2.63	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191533	Chloride	0.202	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191533	Sulfate	0.0611	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191592	Ammonia-N	2.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191595	Kjeldahl Nitrogen	3.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191592	NO2NO3-N	0.283	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191592	Total-P	0.547	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191593	O-Phosphate-P	0.884	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P386310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191176	2,4-D	0.0328	Spike	P	0 - 30
2191176	Acetaminophen	3.07	Spike	P	0 - 30
2191176	Acetamiprid	7.17	Spike	P	0 - 30
2191176	Afidopyropen	2.63	Spike	P	0 - 30
2191176	Bentazon	0.743	Spike	P	0 - 30
2191176	Benzovindiflupyr	4.64	Spike	P	0 - 30
2191176	Carbamazepine	1.24	Spike	P	0 - 30
2191176	Clothianidin	4.10	Spike	P	0 - 30
2191176	Dinotefuran	4.02	Spike	P	0 - 30
2191176	Diuron	0.575	Spike	P	0 - 30
2191176	Fenuron	1.09	Spike	P	0 - 30
2191176	Fluridone	4.59	Spike	P	0 - 30
2191176	Hydrocodone	1.15	Spike	P	0 - 30
2191176	Ibuprofen	18.7	Spike	P	0 - 30
2191176	Imazapyr	22.7	Spike	P	0 - 30
2191176	Imidacloprid	12.5	Spike	P	0 - 30
2191176	Linuron	4.41	Spike	P	0 - 30
2191176	Mandestrobin	0.0768	Spike	P	0 - 30
2191176	MCPP	0.267	Spike	P	0 - 30
2191176	Naproxen	17.3	Spike	P	0 - 30
2191176	Primidone	4.28	Spike	P	0 - 30
2191176	Pyraclostrobin	8.72	Spike	P	0 - 30
2191176	Thiamethoxam	3.48	Spike	P	0 - 30
2191176	Tolfenpyrad	9.88	Spike	P	0 - 30
2191176	Triclopyr	6.56	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191762	Acesulfame K	2.54	Spike	P	0 - 30
2191762	AMPA	1.54	Spike	P	0 - 30
2191762	Endothall	2.19	Spike	P	0 - 30
2191762	Glufosinate	15.2	Spike	P	0 - 30
2191762	Glyphosate	1.83	Spike	P	0 - 30
2191762	Sucralose	13.2	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P386354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191603	Color (true)	0.892	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P386666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191591	Total Alkalinity	0.736	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P386744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191603	TDS	2.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P386459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191591	Fluoride	0.460	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P386549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191508	Organic Carbon	0.455	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2191614

Field Sample ID: G2TLHR0037

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.1	P	30 - 160
EPA 8321B	Diuron-d6	52.3	P	30 - 160
EPA 8321B	Endothall-d6	86.3	P	30 - 160
EPA 8321B	Endothall-d6	86.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.8	P	30 - 160
EPA 8321B	Primidone-d5	69.5	P	30 - 160
EPA 8321B	Sucralose-d6	59.6	P	30 - 160
EPA 8321B	Sucralose-d6	59.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100543

Included Lab Sample IDs: 2191609

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100567

Included Lab Sample IDs: 2191609

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

Reference Method: SM 2120 B-2011

Run ID: A100568

Included Lab Sample IDs: 2191609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.6	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100595

Included Lab Sample IDs: 2191611

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100600

Included Lab Sample IDs: 2191610

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

Reference Method: SM 4500 F-C-2011

Run ID: A100606

Included Lab Sample IDs: 2191609

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

Reference Method: EPA 8321B

Run ID: A100611

Included Lab Sample IDs: 2191614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.8	105	P/P	50 - 150
Acetaminophen	113	112	P/P	60 - 160
Acetamiprid	120	113	P/P	50 - 150
Afidopyrophen	104	96.0	P/P	50 - 150
Bentazon	108	104	P/P	50 - 160
Benzovindiflupyr	110	109	P/P	50 - 150
Carbamazepine	108	108	P/P	60 - 150
Clothianidin	109	115	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A100611
Included Lab Sample IDs: 2191614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	106	102	P/P	50 - 150
Diuron	113	111	P/P	60 - 160
Fenuron	115	104	P/P	60 - 150
Fluridone	106	98.0	P/P	60 - 160
Hydrocodone	98.9	115	P/P	60 - 150
Ibuprofen	99.8	95.9	P/P	50 - 160
Imazapyr	96.7	86.8	P/P	50 - 150
Imidacloprid	91.1	106	P/P	60 - 150
Linuron	117	119	P/P	60 - 150
Mandestrobin	126	126	P/P	50 - 150
MCPP	95.1	111	P/P	50 - 150
Naproxen	95.4	108	P/P	50 - 160
Primidone	108	120	P/P	60 - 150
Pyraclostrobin	109	109	P/P	60 - 150
Thiamethoxam	98.6	109	P/P	50 - 150
Tolfenpyrad	99.8	102	P/P	60 - 150
Triclopyr	103	112	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A100618
Included Lab Sample IDs: 2191610

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

Reference Method: EPA 8321B
Run ID: A100632
Included Lab Sample IDs: 2191614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	79.5	81.2	P/P	60 - 160
Endothall	89.4	94.7	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A100638
Included Lab Sample IDs: 2191614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	85.2	89.1	P/P	60 - 160
Glufosinate	101	96.9	P/P	60 - 160
Glyphosate	81.9	80.3	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A100649
Included Lab Sample IDs: 2191610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.0	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A100654

Included Lab Sample IDs: 2191610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100656

Included Lab Sample IDs: 2191610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100697

Included Lab Sample IDs: 2191609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100703

Included Lab Sample IDs: 2191614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.2	95.5	P/P	60 - 160

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.63	
EPA 300.0 Rev. 2.1	Chloride	98.9	96.8	100		0.202	
	Sulfate	98.1	96.7	100		0.0611	
EPA 350.1 Rev. 2.0	Ammonia-N	94.2	96.8	99.4			2.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	106			3.51
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	102			0.283
EPA 365.1 Rev. 2.0	Total-P	105	105	105			0.547
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	101	102			0.884
EPA 8321B	2,4-D	113	103	103			0.0328
	Acesulfame K	95.6	36.9	37.9			2.54
	Acetaminophen	86.9	90.9	88.1			3.07
	Acetamiprid	73.9	69.8	64.9			7.17
	Afidopyropen	49.7	55.1	53.7			2.63
	AMPA	83.4	109	79.8			1.54
	Bentazon	59.9	63.2	62.1			0.743
	Benzovindiflupyr	75.2	73.0	69.7			4.64
	Carbamazepine	64.7	57.7	57.0			1.24
	Clothianidin	87.1	82.9	79.5			4.10
	Dinotefuran	92.0	94.0	97.8			4.02
	Diuron	54.7	49.1	48.9			0.575
	Endothall	83.4	83.5	81.7			2.19
	Fenuron	87.7	6.98	6.19			1.09
	Fluridone	92.4					4.59
	Glufosinate	89.3	76.7	89.3			15.2
	Glyphosate	77.4	73.9	82.5			1.83
	Hydrocodone	84.2	71.8	72.6			1.15
	Ibuprofen	82.4	80.1	66.4			18.7
	Imazapyr	83.4	64.9	91.5			22.7
	Imidacloprid	92.0	144	127			12.5
	Linuron	65.2	58.7	61.4			4.41
	Mandestrobin	81.1	77.6	77.7			0.0768
	MCPP	116	107	107			0.267
	Naproxen	62.3	57.0	67.7			17.3
	Primidone	83.2	91.0	86.9			4.28
	Pyraclostrobin	67.9	75.2	68.9			8.72
	Sucralose	99.9	61.8	53.2			13.2
	Thiamethoxam	76.8	90.7	87.6			3.48
	Tolfenpyrad	45.0	46.0	41.6			9.88
	Triclopyr	89.2	102	95.8			6.56
SM 2120 B-2011	Color (true)	99.0				0.892	
SM 2320 B-2011	Total Alkalinity	102				0.736	
SM 2540 C-2011	TDS					2.33	
SM 4500 F-C-2011	Fluoride	102	101	100			0.460
SM 5310 B-2011	Organic Carbon	99.2	97.1				0.455

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2191609
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2191609
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2191609
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2191610
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2191610

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2191610
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2191610
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2191611
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2191614
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2191614
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2191609
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2191609
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2191609
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2191609
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2191609
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2191610

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	08/20/2020			08/20/2020 15:09	Yen Ta	2191609
EPA 300.0 Rev. 2.1	08/20/2020			08/21/2020 20:17	Julia Storbeck	2191609
EPA 350.1 Rev. 2.0	08/20/2020			08/23/2020 19:41	Ping Hua	2191610
EPA 351.2 Rev. 2.0	08/20/2020	08/25/2020 09:50	Sima Feizi	08/26/2020 12:47	Virginia P. Brown	2191610
EPA 353.2 Rev. 2.0	08/20/2020			08/24/2020 10:45	Beverly Y. Sanders	2191610
EPA 365.1 Rev. 2.0	08/20/2020	08/24/2020 12:04	Yen Ta	08/26/2020 08:11	Lipi Saha	2191610
EPA 365.1 Rev. 2.0 dissolved	08/20/2020			08/21/2020 15:11	Virginia P. Brown	2191611
EPA 8321B	08/20/2020	08/21/2020 13:00	Hoor Shaik	08/22/2020 04:36	Juyoung Kim	2191614
	08/20/2020	08/24/2020 15:15	Rebecca Ware	08/24/2020 18:34	Rebecca Ware	2191614
	08/20/2020	08/24/2020 15:15	Rebecca Ware	08/25/2020 13:01	Rebecca Ware	2191614
	08/20/2020	08/24/2020 15:15	Rebecca Ware	08/27/2020 12:55	Rebecca Ware	2191614
SM 2120 B-2011	08/20/2020			08/20/2020 16:24	Benjamin T. Nordmann	2191609
SM 2320 B-2011	08/20/2020			08/27/2020 17:41	Dale L. Simmons	2191609
SM 2540 C-2011	08/20/2020			08/21/2020 19:30	Madeline Gruver	2191609
SM 2540 D-2011	08/20/2020			08/21/2020 19:30	Madeline Gruver	2191609
SM 4500 F-C-2011	08/20/2020			08/22/2020 02:07	Dale L. Simmons	2191609
SM 5310 B-2011	08/20/2020			08/26/2020 02:29	Lauren Lees	2191610