

Chemical Analysis Report

SW-DIST-2020-12-10-02

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

Event Description: **Peace Drain**
Request ID: **RQ-2020-12-07-72**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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Date Certified: 04-JAN-2021 09:41



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: 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: Peace Canal @ 91 Mine Road

Collection Date/Time: 12/09/2020 13:20

Field ID: G3SW0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2212227	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P390989	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P391162	
		Sulfate	14		mg SO4/L	P391164	
	SM 2120 B-2011	Color (true)	230		PCU	P390994	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P391578	
	SM 2540 C-2011	TDS	127		mg/L	P391519	
	SM 2540 D-2011	TSS	4	I	mg/L	P391524	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P391090	
2212228	EPA 350.1 Rev. 2.0	Ammonia-N	0.079		mg N/L	P391083	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P391397	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P391023	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P391107	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P391173	
2212229	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P390999	
2212242	EPA 8321B	2,4-D	0.039		ug/L	P391039	
		Acesulfame K**	0.10	U	ug/L	P391013	
		AMPA**	0.80		ug/L	P391013	
		Sucralose**	3.2		ug/L	P391013	
		Acetaminophen**	0.0080	U	ug/L	P391039	
		Acetamiprid**	0.0020	U	ug/L	P391039	
		Endothall**	0.25	U	ug/L	P391013	
		Glufosinate**	0.10	U	ug/L	P391013	
		Glyphosate**	21		ug/L	P391013	
		Afidopyropen**	0.0020	U	ug/L	P391039	
		Bentazon	0.016		ug/L	P391039	
		Benzovindiflupyr**	0.0020	U	ug/L	P391039	
		Carbamazepine**	0.0035		ug/L	P391039	
		Clothianidin**	0.0021	I	ug/L	P391039	
		Dinotefuran**	0.0045	I	ug/L	P391039	
		Diuron	0.0020	U	ug/L	P391039	
		Fenuron	0.016	U	ug/L	P391039	
		Fluridone**	0.0027	I	ug/L	P391039	
		Imazapyr**	0.055		ug/L	P391039	
		Hydrocodone**	0.0020	U	ug/L	P391039	
		Ibuprofen**	0.020	U	ug/L	P391039	
		Imidacloprid	0.023		ug/L	P391039	
		Linuron	0.0040	U	ug/L	P391039	
		Mandestrobin**	0.0020	U	ug/L	P391039	
		MCPP	0.0020	U	ug/L	P391039	
		Naproxen**	0.0080	U	ug/L	P391039	
		Primidone**	0.010	I	ug/L	P391039	
		Pyraclostrobin**	0.0020	U	ug/L	P391039	
		Thiamethoxam**	0.0042	I	ug/L	P391039	

Field ID: G3SW0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2212242	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P391039	
		Triclopyr**	0.0040	U	ug/L	P391039	

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 bentazon 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: P390989

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391162

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391164

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391083

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391397

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391023

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391107

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390999

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

Reference Method: EPA 8321B
Batch ID: P391013

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P391013

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P391039

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: P390994

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P391578

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

Reference Method: SM 2540 C-2011
Batch ID: P391519

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P391524

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P391090

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P391173

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: P391162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391083

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391397

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391023

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391107

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390999

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

Reference Method: EPA 8321B
Batch ID: P391013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
AMPA	90.8		P	40 - 150
Endothall	94.9		P	40 - 150
Glufosinate	97.7		P	40 - 150
Glyphosate	80.5		P	40 - 140
Sucralose	103		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P391039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.8		P	30 - 160
Acetaminophen	64.8		P	30 - 150
Acetamiprid	89.5		P	30 - 160
Afidopyropen	61.0		P	30 - 160
Bentazon	43.3		P	30 - 150
Benzovindiflupyr	79.1		P	30 - 160
Carbamazepine	69.7		P	30 - 160
Clothianidin	81.5		P	30 - 160
Dinotefuran	77.5		P	30 - 160
Diuron	54.1		P	30 - 160
Fenuron	91.8		P	30 - 160
Fluridone	70.6		P	30 - 160
Hydrocodone	84.0		P	30 - 160
Ibuprofen	43.9		P	30 - 160
Imazapyr	65.0		P	30 - 160
Imidacloprid	91.7		P	30 - 160
Linuron	52.7		P	30 - 160
Mandestrobin	72.6		P	30 - 160
MCPP	74.4		P	30 - 160
Naproxen	43.6		P	30 - 160
Primidone	71.5		P	30 - 160
Pyraclostrobin	70.2		P	30 - 160
Thiamethoxam	84.0		P	30 - 160
Tolfenpyrad	43.7		P	30 - 160
Triclopyr	61.0		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P390994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P391578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P391090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212199	Chloride	98.9	99.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212199	Sulfate	99.3	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391083

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212245	Ammonia-N	92.6	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212208	Kjeldahl Nitrogen	88.6	105	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212175	NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212201	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212366	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P391013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211875	Acesulfame K	92.0	91.9	P/P	40 - 150
2211875	AMPA	127	123	P/P	40 - 150
2211875	Endothall	114	110	P/P	40 - 150
2211875	Glufosinate	95.4	108	P/P	40 - 150
2211875	Glyphosate	80.9	97.1	P/P	40 - 140
2211875	Sucralose	99.9	103	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P391039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211885	2,4-D	60.7	59.2	P/P	30 - 160
2211885	Acetaminophen	53.2	57.9	P/P	30 - 150
2211885	Acetamiprid	97.3	92.1	P/P	30 - 160
2211885	Afidopyropen	61.8	62.2	P/P	30 - 160
2211885	Benzovindiflupyr	74.4	69.7	P/P	30 - 160
2211885	Carbamazepine	63.4	62.2	P/P	30 - 160
2211885	Clothianidin	68.2	67.4	P/P	30 - 160
2211885	Dinotefuran	92.5	84.3	P/P	30 - 160
2211885	Diuron	40.8	40.4	P/P	30 - 160
2211885	Fenuron	79.0	79.1	P/P	30 - 160
2211885	Fluridone	69.9	70.9	P/P	30 - 160
2211885	Hydrocodone	102	99.1	P/P	30 - 160
2211885	Ibuprofen	34.4	40.6	P/P	30 - 160
2211885	Imazapyr	55.9	49.7	P/P	30 - 160
2211885	Imidacloprid	105	112	P/P	30 - 160
2211885	Linuron	55.3	58.8	P/P	30 - 160
2211885	Mandestrobin	66.6	69.7	P/P	30 - 160
2211885	MCP	71.5	64.6	P/P	30 - 160
2211885	Naproxen	35.1	33.0	P/P	30 - 160
2211885	Primidone	73.0	69.3	P/P	30 - 160
2211885	Pyraclostrobin	68.0	69.4	P/P	30 - 160
2211885	Thiamethoxam	107	105	P/P	30 - 160
2211885	Tolfenpyrad	47.7	43.3	P/P	30 - 160
2211885	Triclopyr	64.7	66.3	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P391090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212172	Fluoride	96.8	95.7	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212351	Organic Carbon	110	110	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212198	Turbidity	1.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212199	Chloride	0.416	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212199	Sulfate	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212245	Ammonia-N	0.649	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212208	Kjeldahl Nitrogen	11.3	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212175	NO2NO3-N	0.204	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212201	Total-P	0.538	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212366	O-Phosphate-P	0.0979	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P391013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211875	Acesulfame K	0.137	Spike	P	0 - 30
2211875	AMPA	3.00	Spike	P	0 - 30
2211875	Endothall	4.07	Spike	P	0 - 30
2211875	Glufosinate	12.0	Spike	P	0 - 30
2211875	Glyphosate	18.2	Spike	P	0 - 30
2211875	Sucralose	2.10	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P391039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211885	2,4-D	2.48	Spike	P	0 - 30
2211885	Acetaminophen	8.39	Spike	P	0 - 30
2211885	Acetamiprid	5.45	Spike	P	0 - 30
2211885	Afidopyropen	0.697	Spike	P	0 - 30
2211885	Bentazon	5.03	Spike	P	0 - 30
2211885	Benzovindiflupyr	6.46	Spike	P	0 - 30
2211885	Carbamazepine	1.90	Spike	P	0 - 30
2211885	Clothianidin	1.24	Spike	P	0 - 30
2211885	Dinotefuran	9.27	Spike	P	0 - 30
2211885	Diuron	0.957	Spike	P	0 - 30
2211885	Fenuron	0.169	Spike	P	0 - 30
2211885	Fluridone	1.35	Spike	P	0 - 30
2211885	Hydrocodone	2.42	Spike	P	0 - 30
2211885	Ibuprofen	16.5	Spike	P	0 - 30
2211885	Imazapyr	10.5	Spike	P	0 - 30
2211885	Imidacloprid	6.57	Spike	P	0 - 30
2211885	Linuron	6.07	Spike	P	0 - 30
2211885	Mandestrobin	4.65	Spike	P	0 - 30
2211885	MCP	10.2	Spike	P	0 - 30
2211885	Naproxen	6.07	Spike	P	0 - 30
2211885	Primidone	5.31	Spike	P	0 - 30
2211885	Pyraclostrobin	2.08	Spike	P	0 - 30
2211885	Thiamethoxam	1.59	Spike	P	0 - 30
2211885	Tolfenpyrad	9.60	Spike	P	0 - 30
2211885	Triclopyr	2.48	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P390994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212323	Color (true)	6.66	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P391578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212204	Total Alkalinity	2.04	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P391519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212172	TDS	4.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P391090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212172	Fluoride	0.924	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P391173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212351	Organic Carbon	0.0271	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2212242
Field Sample ID: G3SW0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	60.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	59.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.2	P	30 - 160
EPA 8321B	Diuron-d6	59.2	P	30 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	119	P	40 - 160
EPA 8321B	Ibuprofen-d3	44.1	P	30 - 160
EPA 8321B	Primidone-d5	70.5	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102455

Included Lab Sample IDs: 2212227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.3	99.2	P/P	90 - 110
Sulfate	98.5	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102523

Included Lab Sample IDs: 2212227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	104	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A102525

Included Lab Sample IDs: 2212227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102527

Included Lab Sample IDs: 2212229

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102539

Included Lab Sample IDs: 2212228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102553

Included Lab Sample IDs: 2212228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	93.7	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102561

Included Lab Sample IDs: 2212227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A102568

Included Lab Sample IDs: 2212242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.4	89.0	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A102568
Included Lab Sample IDs: 2212242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.4	82.8	P/P	60 - 160
Endothall	98.0	97.6	P/P	60 - 160
Glufosinate	77.6	80.6	P/P	60 - 160
Glyphosate	94.9	87.7	P/P	60 - 160

Reference Method: SM 5310 B-2011
Run ID: A102590
Included Lab Sample IDs: 2212228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	107	107	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A102622
Included Lab Sample IDs: 2212242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	96.5	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A102645
Included Lab Sample IDs: 2212228

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A102692
Included Lab Sample IDs: 2212228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	93.9	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A102709
Included Lab Sample IDs: 2212227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	92.9	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A102718
Included Lab Sample IDs: 2212242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.0	105	P/P	50 - 150
Acetaminophen	107	106	P/P	60 - 160
Acetamiprid	120	124	P/P	50 - 150
Afidopyropen	100	110	P/P	50 - 150
Bentazon	116	105	P/P	50 - 160
Benzovindiflupyr	113	119	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A102718

Included Lab Sample IDs: 2212242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	113	115	P/P	60 - 150
Clothianidin	109	105	P/P	60 - 150
Dinotefuran	101	99.8	P/P	50 - 150
Diuron	101	114	P/P	60 - 160
Fenuron	109	105	P/P	60 - 150
Fluridone	113	123	P/P	60 - 160
Hydrocodone	97.0	97.4	P/P	60 - 150
Ibuprofen	65.1	82.0	P/P	50 - 160
Imazapyr	84.7	83.2	P/P	50 - 150
Imidacloprid	89.8	93.8	P/P	60 - 150
Linuron	118	114	P/P	60 - 150
Mandestrobin	106	106	P/P	50 - 150
MCPP	83.0	89.6	P/P	50 - 150
Naproxen	70.6	68.8	P/P	50 - 160
Primidone	89.8	105	P/P	60 - 150
Pyraclostrobin	107	112	P/P	60 - 150
Thiamethoxam	104	99.3	P/P	50 - 150
Tolfenpyrad	89.8	99.3	P/P	60 - 150
Triclopyr	96.4	98.1	P/P	50 - 150

* 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					1.50	
EPA 300.0 Rev. 2.1	Chloride	98.6	98.9	99.4			0.416
	Sulfate	99.7	99.3	101			1.18
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	92.6	93.4			0.649
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	88.6	105			11.3
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	95.0				0.204
EPA 365.1 Rev. 2.0	Total-P	102	105	104			0.538
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	102	102			0.0979
EPA 8321B	2,4-D	81.8	60.7	59.2			2.48
	Acesulfame K	102	92.0	91.9			0.137
	Acetaminophen	64.8	53.2	57.9			8.39
	Acetamiprid	89.5	97.3	92.1			5.45
	Afidopyropen	61.0	61.8	62.2			0.697
	AMPA	90.8	127	123			3.00
	Bentazon	43.3					5.03
	Benzovindiflupyr	79.1	74.4	69.7			6.46
	Carbamazepine	69.7	63.4	62.2			1.90
	Clothianidin	81.5	68.2	67.4			1.24
	Dinotefuran	77.5	92.5	84.3			9.27
	Diuron	54.1	40.8	40.4			0.957
	Endothall	94.9	114	110			4.07
	Fenuron	91.8	79.0	79.1			0.169
	Fluridone	70.6	69.9	70.9			1.35
	Glufosinate	97.7	95.4	108			12.0
	Glyphosate	80.5	80.9	97.1			18.2
	Hydrocodone	84.0	102	99.1			2.42
	Ibuprofen	43.9	34.4	40.6			16.5
	Imazapyr	65.0	55.9	49.7			10.5
	Imidacloprid	91.7	105	112			6.57
	Linuron	52.7	55.3	58.8			6.07
	Mandestrobin	72.6	66.6	69.7			4.65
	MCPP	74.4	71.5	64.6			10.2
	Naproxen	43.6	35.1	33.0			6.07
	Primidone	71.5	73.0	69.3			5.31
	Pyraclostrobin	70.2	68.0	69.4			2.08
	Sucralose	103	99.9	103			2.10
	Thiamethoxam	84.0	107	105			1.59
	Tolfenpyrad	43.7	47.7	43.3			9.60
	Triclopyr	61.0	64.7	66.3			2.48
SM 2120 B-2011	Color (true)	101				6.66	
SM 2320 B-2011	Total Alkalinity	97.1				2.04	
SM 2540 C-2011	TDS					4.84	
SM 4500 F-C-2011	Fluoride	97.4	96.8	95.7			0.924
SM 5310 B-2011	Organic Carbon	104	110	110			0.0271

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2212227
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2212227
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2212227
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2212228
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2212228

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2212228
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2212228
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2212229
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2212242
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2212242
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2212227
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2212227
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2212227
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2212227
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2212227
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2212228

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	12/10/2020			12/10/2020 14:23	Yen Ta	2212227
EPA 300.0 Rev. 2.1	12/10/2020			12/11/2020 22:11	Lipi Saha	2212227
EPA 350.1 Rev. 2.0	12/10/2020			12/13/2020 17:04	Ping Hua	2212228
EPA 351.2 Rev. 2.0	12/10/2020	12/17/2020 13:35	David Boose	12/20/2020 23:33	Julia Storbeck	2212228
EPA 353.2 Rev. 2.0	12/10/2020			12/11/2020 11:03	Beverly Y. Sanders	2212228
EPA 365.1 Rev. 2.0	12/10/2020	12/14/2020 17:37	Shengyu Wang	12/17/2020 13:50	Benjamin T. Nordmann	2212228
EPA 365.1 Rev. 2.0 dissolved	12/10/2020			12/10/2020 15:49	Blanca Fach	2212229
EPA 8321B	12/10/2020	12/11/2020 11:30	Rebecca Ware	12/11/2020 23:20	Rebecca Ware	2212242
	12/10/2020	12/11/2020 11:30	Rebecca Ware	12/15/2020 16:11	Rebecca Ware	2212242
	12/10/2020	12/15/2020 08:30	Hoor Shaik	12/20/2020 17:58	Juyoung Kim	2212242
SM 2120 B-2011	12/10/2020			12/10/2020 15:39	Benjamin T. Nordmann	2212227
SM 2320 B-2011	12/10/2020			12/22/2020 02:24	Dale L. Simmons	2212227
SM 2540 C-2011	12/10/2020			12/14/2020 14:56	Yijie Li	2212227
SM 2540 D-2011	12/10/2020			12/14/2020 15:56	Yijie Li	2212227
SM 4500 F-C-2011	12/10/2020			12/11/2020 21:36	Dale L. Simmons	2212227
SM 5310 B-2011	12/10/2020			12/14/2020 23:55	Touraj Touran	2212228