

Chemical Analysis Report

SW-DIST-2020-12-16-02

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

Event Description: **HA Owen**
Request ID: **RQ-2020-12-14-07**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-JAN-2021 13:48

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: 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: Owen Creek

Collection Date/Time: 12/15/2020 11:05

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213916	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P391302	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P391845	
	SM 2120 B-2011	Color (true)	140		PCU	P391342	
	SM 2320 B-2011	Total Alkalinity	55		mg CaCO3/L	P391424	
	SM 2540 C-2011	TDS	266		mg/L	P391666	
	SM 2540 D-2011	TSS	7	I	mg/L	P391640	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P391427	
2213917	EPA 350.1 Rev. 2.0	Ammonia-N	2.4		mg N/L	P391734	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.4		mg N/L	P391708	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.54		mg N/L	P391336	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P391446	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P391418	
2213918	EPA 300.0 Rev. 2.1 dissolved	Sulfate	100		mg SO4/L	P391904	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.61		mg P/L	P391298	
2213926	EPA 8321B	2,4-D	0.0020	U	ug/L	P391404	
		Acesulfame K**	0.10	U	ug/L	P391314	
		AMPA**	0.68		ug/L	P391314	
		Sucralose**	0.016	I	ug/L	P391314	
		Acetaminophen**	0.0080	U	ug/L	P391404	
		Acetamiprid**	0.0020	U	ug/L	P391404	
		Endothall**	0.25	U	ug/L	P391314	
		Glufosinate**	0.10	U	ug/L	P391314	
		Glyphosate**	1.6		ug/L	P391314	
		Afidopyropen**	0.0020	U	ug/L	P391404	
		Bentazon	0.0056		ug/L	P391404	
		Benzovindiflupyr**	0.0020	U	ug/L	P391404	
		Carbamazepine**	8.0E-04	U	ug/L	P391404	
		Clothianidin**	0.0020	U	ug/L	P391404	
		Dinotefuran**	0.043		ug/L	P391404	
		Diuron	0.0020	U	ug/L	P391404	
		Fenuron	0.016	U	ug/L	P391404	
		Fluridone**	8.0E-04	U	ug/L	P391404	
		Imazapyr**	0.0040	U	ug/L	P391404	
		Hydrocodone**	0.0020	U	ug/L	P391404	
		Ibuprofen**	0.020	U	ug/L	P391404	
		Imidacloprid	0.012		ug/L	P391404	
		Linuron	0.0040	U	ug/L	P391404	
		Mandestrobin**	0.0020	U	ug/L	P391404	
		MCP	0.0020	U	ug/L	P391404	
		Naproxen**	0.0080	U	ug/L	P391404	
		Primidone**	0.0040	U	ug/L	P391404	
		Pyraclostrobin**	0.0020	U	ug/L	P391404	
		Thiamethoxam**	0.0020	U	ug/L	P391404	

Field ID: G3SW0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213926	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P391404	
		Triclopyr**	0.0040	U	ug/L	P391404	

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 some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: FB 121520

Collection Date/Time: 12/15/2020 13:00

Field ID: FB 121520

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213927	EPA 8321B	2,4-D	0.0020	U	ug/L	P391404	
		Acesulfame K**	0.10	U	ug/L	P391314	
		AMPA**	0.10	U	ug/L	P391314	
		Sucralose**	0.010	U	ug/L	P391314	
		Acetaminophen**	0.0080	U	ug/L	P391404	
		Acetamiprid**	0.0020	U	ug/L	P391404	
		Endothall**	0.25	U	ug/L	P391314	
		Glufosinate**	0.10	U	ug/L	P391314	
		Glyphosate**	0.10	U	ug/L	P391314	
		Afidopyropen**	0.0020	U	ug/L	P391404	
		Bentazon	8.0E-04	U	ug/L	P391404	
		Benzovindiflupyr**	0.0020	U	ug/L	P391404	
		Carbamazepine**	8.0E-04	U	ug/L	P391404	
		Clothianidin**	0.0020	U	ug/L	P391404	
		Dinotefuran**	0.0020	U	ug/L	P391404	
		Diuron	0.0020	U	ug/L	P391404	
		Fenuron	0.016	U	ug/L	P391404	
		Fluridone**	8.0E-04	U	ug/L	P391404	
		Imazapyr**	0.0040	U	ug/L	P391404	
		Hydrocodone**	0.0020	U	ug/L	P391404	
		Ibuprofen**	0.020	U	ug/L	P391404	
		Imidacloprid	0.0020	U	ug/L	P391404	
		Linuron	0.0040	U	ug/L	P391404	
		Mandestrobin**	0.0020	U	ug/L	P391404	
		MCPP	0.0020	U	ug/L	P391404	
		Naproxen**	0.0080	U	ug/L	P391404	
		Primidone**	0.0040	U	ug/L	P391404	
		Pyraclostrobin**	0.0020	U	ug/L	P391404	
		Thiamethoxam**	0.0020	U	ug/L	P391404	
		Tolfenpyrad**	0.0020	U	ug/L	P391404	
		Triclopyr**	0.0040	U	ug/L	P391404	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes 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: P391302

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P391904

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391734

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391708

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391336

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391446

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391298

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

Reference Method: EPA 8321B
Batch ID: P391314

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: P391314

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

Reference Method: EPA 8321B

Batch ID: P391404

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: P391342

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P391424

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

Reference Method: SM 2540 C-2011

Batch ID: P391666

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P391640

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P391427

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P391418

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: P391845

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P391904

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391336

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: P391446

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: P391298

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

Reference Method: EPA 8321B
Batch ID: P391314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	93.5		P	40 - 150
Endothall	90.9		P	40 - 150
Glufosinate	96.9		P	40 - 150
Glyphosate	92.3		P	40 - 140
Sucralose	105		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P391404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.4		P	30 - 160
Acetaminophen	70.0		P	30 - 150
Acetamiprid	78.5		P	30 - 160
Afidopyropen	44.7		P	30 - 160
Bentazon	39.2		P	30 - 150
Benzovindiflupyr	68.5		P	30 - 160
Carbamazepine	78.0		P	30 - 160
Clothianidin	85.6		P	30 - 160
Dinotefuran	78.3		P	30 - 160
Diuron	64.8		P	30 - 160
Fenuron	90.8		P	30 - 160
Fluridone	72.5		P	30 - 160
Hydrocodone	84.7		P	30 - 160
Ibuprofen	54.2		P	30 - 160
Imazapyr	76.0		P	30 - 160
Imidacloprid	89.5		P	30 - 160
Linuron	56.5		P	30 - 160
Mandestrobin	69.7		P	30 - 160
MCPP	81.0		P	30 - 160
Naproxen	43.7		P	30 - 160
Primidone	78.6		P	30 - 160
Pyraclostrobin	70.0		P	30 - 160
Thiamethoxam	88.2		P	30 - 160
Tolfenpyrad	43.9		P	30 - 160
Triclopyr	71.7		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P391342

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

Reference Method: SM 2320 B-2011
Batch ID: P391424

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

Reference Method: SM 4500 F-C-2011
Batch ID: P391427

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213839	Chloride	102		P	90 - 110
2214346	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P391904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214542	Sulfate	103		P	90 - 110
2214796	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214323	Ammonia-N	95.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213841	Kjeldahl Nitrogen	97.4	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213939	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213840	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213815	O-Phosphate-P	97.2	97.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P391314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213076	Acesulfame K	110	109	P/P	40 - 150
2213076	AMPA	130	144	P/P	40 - 150
2213076	Endothall	106	117	P/P	40 - 150
2213076	Glufosinate	95.1	110	P/P	40 - 150
2213076	Glyphosate	72.1	89.2	P/P	40 - 140
2213076	Sucralose	104	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P391404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214862	Acetaminophen	64.6	72.4	P/P	30 - 150
2214862	Acetamiprid	86.3	89.0	P/P	30 - 160
2214862	Afidopyropen	66.3	70.8	P/P	30 - 160
2214862	Benzovindiflupyr	74.0	76.6	P/P	30 - 160
2214862	Carbamazepine	69.1	74.8	P/P	30 - 160
2214862	Clothianidin	68.4	71.5	P/P	30 - 160
2214862	Dinotefuran	70.4	75.6	P/P	30 - 160
2214862	Diuron	51.3	52.2	P/P	30 - 160
2214862	Fenuron	63.5	64.0	P/P	30 - 160
2214862	Hydrocodone	66.0	67.8	P/P	30 - 160
2214862	Ibuprofen	52.4	46.0	P/P	30 - 160
2214862	Imazapyr	99.7	97.5	P/P	30 - 160
2214862	Imidacloprid	117	122	P/P	30 - 160
2214862	Linuron	53.3	58.4	P/P	30 - 160
2214862	Mandestrobin	69.9	78.7	P/P	30 - 160
2214862	MCCP	68.9	65.2	P/P	30 - 160
2214862	Naproxen	45.5	57.0	P/P	30 - 160
2214862	Primidone	66.9	67.2	P/P	30 - 160
2214862	Pyraclostrobin	75.4	82.9	P/P	30 - 160
2214862	Thiamethoxam	88.0	89.8	P/P	30 - 160
2214862	Tolfenpyrad	44.9	47.9	P/P	30 - 160
2214862	Triclopyr	68.9	67.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P391427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214235	Fluoride	100	99.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213859	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P391302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213813	Turbidity	1.32	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213839	Chloride	0.618	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P391904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214796	Sulfate	0.745	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214323	Ammonia-N	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213841	Kjeldahl Nitrogen	2.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213939	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213840	Total-P	0.902	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213815	O-Phosphate-P	0.513	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P391314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213076	Acesulfame K	0.833	Spike	P	0 - 30
2213076	AMPA	10.4	Spike	P	0 - 30
2213076	Endothall	9.97	Spike	P	0 - 30
2213076	Glufosinate	14.9	Spike	P	0 - 30
2213076	Glyphosate	21.3	Spike	P	0 - 30
2213076	Sucralose	3.89	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P391404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214862	2,4-D	0.511	Spike	P	0 - 30
2214862	Acetaminophen	11.5	Spike	P	0 - 30
2214862	Acetamiprid	3.09	Spike	P	0 - 30
2214862	Afidopyropen	6.70	Spike	P	0 - 30
2214862	Bentazon	2.10	Spike	P	0 - 30
2214862	Benzovindiflupyr	3.52	Spike	P	0 - 30
2214862	Carbamazepine	7.84	Spike	P	0 - 30
2214862	Clothianidin	4.46	Spike	P	0 - 30
2214862	Dinotefuran	7.05	Spike	P	0 - 30
2214862	Diuron	1.77	Spike	P	0 - 30
2214862	Fenuron	0.698	Spike	P	0 - 30
2214862	Fluridone	8.85	Spike	P	0 - 30
2214862	Hydrocodone	2.68	Spike	P	0 - 30
2214862	Ibuprofen	13.0	Spike	P	0 - 30
2214862	Imazapyr	1.52	Spike	P	0 - 30
2214862	Imidacloprid	4.07	Spike	P	0 - 30
2214862	Linuron	9.02	Spike	P	0 - 30
2214862	Mandestrobin	11.9	Spike	P	0 - 30
2214862	MCP	5.46	Spike	P	0 - 30
2214862	Naproxen	22.4	Spike	P	0 - 30
2214862	Primidone	0.433	Spike	P	0 - 30
2214862	Pyraclostrobin	9.57	Spike	P	0 - 30
2214862	Thiamethoxam	2.05	Spike	P	0 - 30
2214862	Tolfenpyrad	6.35	Spike	P	0 - 30
2214862	Triclopyr	2.05	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P391342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213798	Color (true)	2.49	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P391424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214235	Total Alkalinity	3.30	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P391666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213839	TDS	7.18	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P391427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214235	Fluoride	0.499	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P391418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213859	Organic Carbon	1.17	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2213926
Field Sample ID: G3SW0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	70.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.9	P	30 - 160
EPA 8321B	Diuron-d6	43.7	P	30 - 160
EPA 8321B	Endothall-d6	124	P	40 - 160
EPA 8321B	Endothall-d6	124	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	153	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	153	P	40 - 160
EPA 8321B	Ibuprofen-d3	57.0	P	30 - 160
EPA 8321B	Primidone-d5	70.8	P	30 - 160
EPA 8321B	Sucralose-d6	56.1	P	30 - 160
EPA 8321B	Sucralose-d6	56.1	P	30 - 160

Lab Sample ID: 2213927
Field Sample ID: FB 121520

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.7	P	30 - 160
EPA 8321B	Diuron-d6	63.3	P	30 - 160
EPA 8321B	Endothall-d6	96.3	P	40 - 160
EPA 8321B	Endothall-d6	96.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	91.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	91.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	59.9	P	30 - 160
EPA 8321B	Primidone-d5	81.0	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102626

Included Lab Sample IDs: 2213918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102627

Included Lab Sample IDs: 2213916

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102638

Included Lab Sample IDs: 2213917

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

Reference Method: SM 2120 B-2011

Run ID: A102639

Included Lab Sample IDs: 2213916

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

Reference Method: SM 5310 B-2011

Run ID: A102665

Included Lab Sample IDs: 2213917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A102668

Included Lab Sample IDs: 2213916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102668

Included Lab Sample IDs: 2213916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A102674

Included Lab Sample IDs: 2213926, 2213927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	103	P/P	60 - 160
Sucralose	105	104	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102700

Included Lab Sample IDs: 2213917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	99.5	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A102710

Included Lab Sample IDs: 2213926, 2213927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	106	P/P	60 - 160
Acesulfame K	97.9	103	P/P	60 - 160
AMPA	87.6	95.4	P/P	60 - 160
AMPA	94.9	91.7	P/P	60 - 160
Endothall	94.3	97.1	P/P	60 - 160
Endothall	99.2	105	P/P	60 - 160
Glufosinate	89.3	99.2	P/P	60 - 160
Glufosinate	93.7	95.8	P/P	60 - 160
Glyphosate	103	89.1	P/P	60 - 160
Glyphosate	98.9	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A102765

Included Lab Sample IDs: 2213926, 2213927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	86.6	P/P	50 - 150
Acetaminophen	125	139	P/P	60 - 160
Acetamiprid	113	121	P/P	50 - 150
Afidopyropen	104	108	P/P	50 - 150
Bentazon	123	150	P/P	50 - 160
Benzovindiflupyr	113	115	P/P	50 - 150
Carbamazepine	112	119	P/P	60 - 150
Clothianidin	128	121	P/P	60 - 150
Dinotefuran	116	118	P/P	50 - 150
Diuron	123	128	P/P	60 - 160
Fenuron	109	114	P/P	60 - 150
Fluridone	87.3	105	P/P	60 - 160
Hydrocodone	117	113	P/P	60 - 150
Ibuprofen	80.7	74.6	P/P	50 - 160
Imazapyr	105	93.8	P/P	50 - 150
Imidacloprid	113	102	P/P	60 - 150
Linuron	103	117	P/P	60 - 150
Mandestrobin	108	114	P/P	50 - 150
MCP	92.7	92.2	P/P	50 - 150
Naproxen	109	145	P/P	50 - 160
Primidone	108	113	P/P	60 - 150
Pyraclostrobin	110	114	P/P	60 - 150
Thiamethoxam	124	112	P/P	50 - 150
Tolfenpyrad	101	94.1	P/P	60 - 150
Triclopyr	95.8	93.5	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102784

Included Lab Sample IDs: 2213917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102804

Included Lab Sample IDs: 2213917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	93.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102826

Included Lab Sample IDs: 2213916

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

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A102826

Included Lab Sample IDs: 2213918

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.32	
EPA 300.0 Rev. 2.1	Chloride	102	102	103		0.618	
EPA 300.0 Rev. 2.1 dissolved	Sulfate	103	104	103		0.745	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	95.2	98.0			2.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	97.4	101			2.30
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	98.2				0.0
EPA 365.1 Rev. 2.0	Total-P	102	102	101			0.902
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.2	97.7			0.513
EPA 8321B	2,4-D	81.4					0.511
	Acesulfame K	106	110	109			0.833
	Acetaminophen	70.0	72.4	64.6			11.5
	Acetamiprid	78.5	89.0	86.3			3.09
	Afidopyropen	44.7	70.8	66.3			6.70
	AMPA	93.5	130	144			10.4
	Bentazon	39.2					2.10
	Benzovindiflupyr	68.5	76.6	74.0			3.52
	Carbamazepine	78.0	74.8	69.1			7.84
	Clothianidin	85.6	71.5	68.4			4.46
	Dinotefuran	78.3	75.6	70.4			7.05
	Diuron	64.8	52.2	51.3			1.77
	Endothall	90.9	106	117			9.97
	Fenuron	90.8	64.0	63.5			0.698
	Fluridone	72.5					8.85
	Glufosinate	96.9	95.1	110			14.9
	Glyphosate	92.3	72.1	89.2			21.3
	Hydrocodone	84.7	67.8	66.0			2.68
	Ibuprofen	54.2	52.4	46.0			13.0
	Imazapyr	76.0	97.5	99.7			1.52
	Imidacloprid	89.5	122	117			4.07
	Linuron	56.5	58.4	53.3			9.02
	Mandestrobin	69.7	78.7	69.9			11.9
	MCP	81.0	68.9	65.2			5.46
	Naproxen	43.7	45.5	57.0			22.4
	Primidone	78.6	67.2	66.9			0.433
	Pyraclostrobin	70.0	82.9	75.4			9.57
	Sucralose	105	104	109			3.89
	Thiamethoxam	88.2	89.8	88.0			2.05
	Tolfenpyrad	43.9	47.9	44.9			6.35
	Triclopyr	71.7	68.9	67.5			2.05
SM 2120 B-2011	Color (true)	101				2.49	
SM 2320 B-2011	Total Alkalinity	101				3.30	
SM 2540 C-2011	TDS					7.18	
SM 4500 F-C-2011	Fluoride	99.9	99.4	100			0.499
SM 5310 B-2011	Organic Carbon	97.2	102				1.17

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2213916
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2213916
EPA 300.0 Rev. 2.1 dissolved	Sulfate, dissolved, in filtered, aqueous matrices	2213918
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2213917

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2213917
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2213917
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2213917
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2213918
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2213926, 2213927
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2213926, 2213927
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2213916
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2213916
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2213916
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2213916
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2213916
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2213917

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	12/16/2020			12/16/2020 15:23	Yen Ta	2213916
EPA 300.0 Rev. 2.1	12/16/2020			12/30/2020 01:47	Lipi Saha	2213916
EPA 300.0 Rev. 2.1 dissolved	12/16/2020			12/30/2020 16:45	Lipi Saha	2213918
EPA 350.1 Rev. 2.0	12/16/2020			12/27/2020 15:05	Ping Hua	2213917
EPA 351.2 Rev. 2.0	12/16/2020	12/23/2020 14:55	David Boose	12/28/2020 17:22	Julia Storbeck	2213917
EPA 353.2 Rev. 2.0	12/16/2020			12/17/2020 11:01	Beverly Y. Sanders	2213917
EPA 365.1 Rev. 2.0	12/16/2020	12/18/2020 13:00	Yen Ta	12/21/2020 13:33	Benjamin T. Nordmann	2213917
EPA 365.1 Rev. 2.0 dissolved	12/16/2020			12/16/2020 16:04	Virginia P. Brown	2213918
EPA 8321B	12/16/2020	12/17/2020 11:00	Rebecca Ware	12/17/2020 11:59	Rebecca Ware	2213927
	12/16/2020	12/17/2020 11:00	Rebecca Ware	12/17/2020 16:22	Rebecca Ware	2213926
	12/16/2020	12/17/2020 11:00	Rebecca Ware	12/18/2020 19:37	Rebecca Ware	2213927
	12/16/2020	12/17/2020 11:00	Rebecca Ware	12/19/2020 00:26	Rebecca Ware	2213926
	12/16/2020	12/21/2020 12:00	Hoor Shaik	12/23/2020 01:08	Juyoung Kim	2213926
	12/16/2020	12/21/2020 12:00	Hoor Shaik	12/23/2020 01:43	Juyoung Kim	2213927
SM 2120 B-2011	12/16/2020			12/16/2020 17:22	Benjamin T. Nordmann	2213916
SM 2320 B-2011	12/16/2020			12/17/2020 21:59	Dale L. Simmons	2213916
SM 2540 C-2011	12/16/2020			12/18/2020 15:11	Yijie Li	2213916
SM 2540 D-2011	12/16/2020			12/18/2020 15:11	Yijie Li	2213916
SM 4500 F-C-2011	12/16/2020			12/17/2020 21:59	Dale L. Simmons	2213916
SM 5310 B-2011	12/16/2020			12/18/2020 01:44	Touraj Touran	2213917