

Chemical Analysis Report

SO-DIST-2021-03-12-01

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

Event Description: **2021 SMP : Way Up There**
Request ID: **RQ-2021-03-08-24**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 01-APR-2021 16:09

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: ArbuckleCreekNearBranch

Collection Date/Time: 03/11/2021 13:45

Field ID: G4SD0210

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231115	EPA 180.1 Rev. 2.0	Turbidity	8.1	A	NTU	P394921	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P395190	
		Sulfate	27		mg SO4/L	P395193	
	SM 2120 B-2011	Color (true)	100		PCU	P394918	
	SM 2320 B-2011	Total Alkalinity	14		mg CaCO3/L	P395081	
	SM 2540 C-2011	TDS	122	A	mg/L	P395368	
	SM 2540 D-2011	TSS	13	A	mg/L	P395374	
	SM 4500 F-C-2011	Fluoride	0.068	I	mg F/L	P395084	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P395000	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P395204	
2231116	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P394968	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P395101	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P395397	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P394914	

Sample Location: Arbuckle Branch near RR

Collection Date/Time: 03/11/2021 14:00

Field ID: G4SD0197

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231261	EPA 8321B	2,4-D	0.0020	U	ug/L	P394766	
		Acesulfame K	0.10	UJ	ug/L	P395013	MS
		AMPA	0.10	U	ug/L	P395013	
		2,4,5-T	0.0040	U	ug/L	P394766	
		Sucralose	0.011	I	ug/L	P395013	
		Acetaminophen	0.0080	U	ug/L	P394766	
		Endothall	0.25	U	ug/L	P395013	
		Acetamiprid	0.0020	U	ug/L	P394766	
		Glufosinate	0.10	U	ug/L	P395013	
		Glyphosate	0.10	U	ug/L	P395013	
		Afidopyropen	0.0020	U	ug/L	P394766	
		Bentazon	0.0012	I	ug/L	P394766	
		Benzovindiflupyr	0.0020	U	ug/L	P394766	
		Carbamazepine	8.0E-04	U	ug/L	P394766	
		Clothianidin	0.0020	U	ug/L	P394766	
		Dinotefuran	0.0020	U	ug/L	P394766	
		Diuron	0.0020	U	ug/L	P394766	
		Fenuron	0.016	U	ug/L	P394766	
		Fluridone	8.5E-04	I	ug/L	P394766	
		Imazapyr	0.0040	U	ug/L	P394766	
		Hydrocodone	0.0020	U	ug/L	P394766	
		Ibuprofen	0.020	U	ug/L	P394766	
		Imidacloprid	0.0020	U	ug/L	P394766	
		Linuron	0.0040	U	ug/L	P394766	
		Mandestrobin	0.0020	U	ug/L	P394766	
		MCPP	0.0020	U	ug/L	P394766	
		Naproxen	0.0080	U	ug/L	P394766	
		Primidone	0.0040	U	ug/L	P394766	
		Pyraclostrobin	0.0020	U	ug/L	P394766	
		Thiamethoxam	0.0020	U	ug/L	P394766	
		Tolfenpyrad	0.0020	U	ug/L	P394766	
		Triclopyr	0.0040	U	ug/L	P394766	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394921

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395190

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395193

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395000

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395204

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394968

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395101

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394914

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

Reference Method: EPA 8321B
Batch ID: P394766

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394766

Component	Result	Code	Units
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: EPA 8321B

Batch ID: P395013

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: P394918

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P395081

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

Reference Method: SM 2540 C-2011

Batch ID: P395368

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P395374

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395084

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395397

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: P395190

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395204

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395101

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P394766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	119		P	30 - 160
2,4,5-T	115		P	30 - 160
Acetaminophen	144		P	30 - 160
Acetamiprid	88.1		P	30 - 160
Afidopyropen	64.2		P	30 - 160
Bentazon	80.8		P	30 - 160
Benzovindiflupyr	98.0		P	30 - 160
Carbamazepine	102		P	30 - 160
Clothianidin	70.1		P	30 - 160
Dinotefuran	94.7		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P394766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	84.1		P	30 - 160
Fenuron	106		P	30 - 160
Fluridone	84.2		P	30 - 160
Hydrocodone	100		P	30 - 160
Ibuprofen	99.4		P	30 - 160
Imazapyr	90.4		P	30 - 160
Imidacloprid	99.3		P	30 - 160
Linuron	80.7		P	30 - 160
Mandestrobin	96.0		P	30 - 160
MCPP	133		P	30 - 160
Naproxen	63.5		P	30 - 160
Primidone	93.8		P	30 - 160
Pyraclostrobin	84.4		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.5		P	30 - 160
Triclopyr	121		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	132		P	40 - 150
AMPA	96.9		P	40 - 150
Endothall	91.9		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	125		P	40 - 140
Sucralose	92.4		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P394918

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

Reference Method: SM 2320 B-2011

Batch ID: P395081

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

Reference Method: SM 4500 F-C-2011

Batch ID: P395084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231031	Chloride	100		P	90 - 110
2231122	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231031	Sulfate	97.6		P	90 - 110
2231122	Sulfate	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231116	Ammonia-N	95.2	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231037	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231047	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231032	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231117	O-Phosphate-P	97.3	97.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P394766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229932	2,4-D	101	119	P/P	30 - 160
2229932	2,4,5-T	103	106	P/P	30 - 160
2229932	Acetaminophen	93.0	98.4	P/P	30 - 160
2229932	Acetamiprid	84.4	89.6	P/P	30 - 160
2229932	Afidopyrophen	67.3	77.7	P/P	30 - 160
2229932	Bentazon	60.1	65.2	P/P	30 - 160
2229932	Benzovindiflupyr	88.7	99.1	P/P	30 - 160
2229932	Carbamazepine	93.9	104	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P394766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229932	Clothianidin	69.2	78.9	P/P	30 - 160
2229932	Dinotefuran	94.4	108	P/P	30 - 160
2229932	Diuron	70.2	72.2	P/P	30 - 160
2229932	Fenuron	93.4	97.9	P/P	30 - 160
2229932	Fluridone	77.5	78.4	P/P	30 - 160
2229932	Hydrocodone	96.6	109	P/P	30 - 160
2229932	Ibuprofen	72.5	85.8	P/P	30 - 160
2229932	Imazapyr	76.1	86.5	P/P	30 - 160
2229932	Imidacloprid	119	127	P/P	30 - 160
2229932	Linuron	65.3	72.2	P/P	30 - 160
2229932	Mandestrobin	94.4	98.9	P/P	30 - 160
2229932	MCPP	119	136	P/P	30 - 160
2229932	Naproxen	64.5	58.0	P/P	30 - 160
2229932	Primidone	101	105	P/P	30 - 160
2229932	Pyraclostrobin	83.4	91.7	P/P	30 - 160
2229932	Thiamethoxam	118	122	P/P	30 - 160
2229932	Tolfenpyrad	55.5	59.4	P/P	30 - 160
2229932	Triclopyr	108	110	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231261	Acesulfame K	174	176	F/F	40 - 150
2231261	AMPA	126	117	P/P	40 - 150
2231261	Endothall	86.4	78.0	P/P	40 - 150
2231261	Glufosinate	108	134	P/P	40 - 150
2231261	Glyphosate	106	119	P/P	40 - 140
2231261	Sucralose	88.1	85.2	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P395084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231391	Fluoride	100	99.0	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P395397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230911	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231115	Turbidity	2.34	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231031	Chloride	1.78	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231031	Sulfate	2.57	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231116	Ammonia-N	0.677	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231037	Kjeldahl Nitrogen	2.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231047	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231032	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231117	O-Phosphate-P	0.172	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P394766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229932	2,4-D	14.6	Spike	P	0 - 30
2229932	2,4,5-T	2.72	Spike	P	0 - 30
2229932	Acetaminophen	5.69	Spike	P	0 - 30
2229932	Acetamiprid	5.98	Spike	P	0 - 30
2229932	Afidopyropen	14.3	Spike	P	0 - 30
2229932	Bentazon	8.06	Spike	P	0 - 30
2229932	Benzovindiflupyr	11.1	Spike	P	0 - 30
2229932	Carbamazepine	10.4	Spike	P	0 - 30
2229932	Clothianidin	13.1	Spike	P	0 - 30
2229932	Dinotefuran	13.5	Spike	P	0 - 30
2229932	Diuron	2.89	Spike	P	0 - 30
2229932	Fenuron	4.75	Spike	P	0 - 30
2229932	Fluridone	1.23	Spike	P	0 - 30
2229932	Hydrocodone	11.9	Spike	P	0 - 30
2229932	Ibuprofen	16.8	Spike	P	0 - 30
2229932	Imazapyr	12.9	Spike	P	0 - 30
2229932	Imidacloprid	6.71	Spike	P	0 - 30
2229932	Linuron	10.1	Spike	P	0 - 30
2229932	Mandestrobin	4.61	Spike	P	0 - 30
2229932	MCP	13.3	Spike	P	0 - 30
2229932	Naproxen	10.7	Spike	P	0 - 30
2229932	Primidone	4.17	Spike	P	0 - 30
2229932	Pyraclostrobin	9.49	Spike	P	0 - 30
2229932	Thiamethoxam	3.02	Spike	P	0 - 30
2229932	Tolfenpyrad	6.95	Spike	P	0 - 30
2229932	Triclopyr	2.15	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P395013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231261	Acesulfame K	1.28	Spike	P	0 - 30
2231261	AMPA	7.79	Spike	P	0 - 30
2231261	Endothall	10.2	Spike	P	0 - 30
2231261	Glufosinate	21.6	Spike	P	0 - 30
2231261	Glyphosate	11.3	Spike	P	0 - 30
2231261	Sucralose	3.27	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P394918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231289	Color (true)	0.579	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P395081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P395081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231391	Total Alkalinity	0.245	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P395368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231115	TDS	2.45	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P395374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231115	TSS	8.96	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P395084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231391	Fluoride	0.946	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230911	Organic Carbon	0.824	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2231261

Field Sample ID: G4SD0197

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.7	P	30 - 160
EPA 8321B	Diuron-d6	56.6	P	30 - 160
EPA 8321B	Endothall-d6	128	P	40 - 160
EPA 8321B	Endothall-d6	128	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	90.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	90.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	87.6	P	30 - 160
EPA 8321B	Primidone-d5	78.8	P	30 - 160
EPA 8321B	Sucralose-d6	90.1	P	30 - 160
EPA 8321B	Sucralose-d6	90.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104041

Included Lab Sample IDs: 2231117

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A104042

Included Lab Sample IDs: 2231115

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104045

Included Lab Sample IDs: 2231115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104062

Included Lab Sample IDs: 2231116

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: A104072

Included Lab Sample IDs: 2231116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104088

Included Lab Sample IDs: 2231261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	155	110	P/P	60 - 160
AMPA	112	114	P/P	60 - 160
Endothall	126	98.2	P/P	60 - 160
Glufosinate	108	101	P/P	60 - 160
Glyphosate	120	145	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A104103

Included Lab Sample IDs: 2231115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A104103

Included Lab Sample IDs: 2231115

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104133

Included Lab Sample IDs: 2231116

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104153

Included Lab Sample IDs: 2231115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.8	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104157

Included Lab Sample IDs: 2231261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	120	117	P/P	50 - 150
2,4,5-T	127	120	P/P	50 - 150
Acetaminophen	111	107	P/P	60 - 160
Acetamiprid	117	111	P/P	50 - 150
Afidopyropen	109	124	P/P	50 - 150
Bentazon	109	107	P/P	50 - 160
Benzovindiflupyr	121	116	P/P	50 - 160
Carbamazepine	120	106	P/P	60 - 150
Clothianidin	107	105	P/P	60 - 150
Dinotefuran	113	107	P/P	50 - 150
Diuron	119	114	P/P	60 - 160
Fenuron	104	106	P/P	60 - 150
Fluridone	105	101	P/P	60 - 160
Hydrocodone	116	106	P/P	60 - 150
Ibuprofen	134	151	P/P	50 - 160
Imazapyr	120	114	P/P	50 - 160
Imidacloprid	97.1	104	P/P	60 - 150
Linuron	110	103	P/P	60 - 150
Mandestrobin	126	122	P/P	50 - 150
MCPP	126	126	P/P	50 - 150
Naproxen	128	119	P/P	50 - 160
Primidone	110	116	P/P	60 - 150
Pyraclostrobin	115	119	P/P	60 - 150
Thiamethoxam	116	107	P/P	50 - 150
Tolfenpyrad	126	118	P/P	60 - 150
Triclopyr	120	117	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104236

Included Lab Sample IDs: 2231116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104250

Included Lab Sample IDs: 2231116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104272

Included Lab Sample IDs: 2231261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.4	96.7	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				2.34	
EPA 300.0 Rev. 2.1	Chloride	101	100	101	1.78	
	Sulfate	99.6	97.6	94.0	2.57	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	95.2	96.0		0.677
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	106	109		2.43
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.5	99.5		0.0
EPA 365.1 Rev. 2.0	Total-P	106	106	107		1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	97.3	97.5		0.172
EPA 8321B	2,4-D	119	101	119		14.6
	2,4,5-T	115	103	106		2.72
	Acesulfame K	132	174	176		1.28
	Acetaminophen	144	93.0	98.4		5.69
	Acetamiprid	88.1	84.4	89.6		5.98
	Afidopyropen	64.2	67.3	77.7		14.3
	AMPA	96.9	126	117		7.79
	Bentazon	80.8	60.1	65.2		8.06
	Benzovindiflupyr	98.0	88.7	99.1		11.1
	Carbamazepine	102	93.9	104		10.4
	Clothianidin	70.1	69.2	78.9		13.1
	Dinotefuran	94.7	94.4	108		13.5
	Diuron	84.1	70.2	72.2		2.89
	Endothall	91.9	86.4	78.0		10.2
	Fenuron	106	93.4	97.9		4.75
	Fluridone	84.2	77.5	78.4		1.23
	Glufosinate	109	108	134		21.6
	Glyphosate	125	106	119		11.3
	Hydrocodone	100	96.6	109		11.9
	Ibuprofen	99.4	72.5	85.8		16.8
	Imazapyr	90.4	76.1	86.5		12.9
	Imidacloprid	99.3	119	127		6.71
	Linuron	80.7	65.3	72.2		10.1
	Mandestrobin	96.0	94.4	98.9		4.61
	MCPP	133	119	136		13.3
	Naproxen	63.5	64.5	58.0		10.7
	Primidone	93.8	101	105		4.17
	Pyraclostrobin	84.4	83.4	91.7		9.49
	Sucralose	92.4	88.1	85.2		3.27
	Thiamethoxam	101	118	122		3.02
	Tolfenpyrad	56.5	55.5	59.4		6.95
	Triclopyr	121	108	110		2.15
SM 2120 B-2011	Color (true)	102			0.579	
SM 2320 B-2011	Total Alkalinity	101			0.245	
SM 2540 C-2011	TDS				2.45	
SM 2540 D-2011	TSS				8.96	
SM 4500 F-C-2011	Fluoride	99.2	100	99.0		0.946
SM 5310 B-2011	Organic Carbon	95.4	102			0.824

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2231115
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2231115
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2231115

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2231116
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2231116
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2231116
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2231116
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2231117
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2231261
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2231261
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2231115
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2231115
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2231115
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2231115
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2231115
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2231116

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	03/12/2021			03/12/2021 14:31	Yen Ta	2231115
EPA 300.0 Rev. 2.1	03/12/2021			03/15/2021 21:35	Lipi Saha	2231115
EPA 350.1 Rev. 2.0	03/12/2021			03/15/2021 18:26	Ping Hua	2231116
EPA 351.2 Rev. 2.0	03/12/2021	03/19/2021 12:22	Benjamin T. Nordmann	03/23/2021 21:34	Julia Storbeck	2231116
EPA 353.2 Rev. 2.0	03/12/2021			03/15/2021 10:52	Beverly Y. Sanders	2231116
EPA 365.1 Rev. 2.0	03/12/2021	03/17/2021 13:18	Yen Ta	03/18/2021 11:45	Shengyu Ding	2231116
EPA 365.1 Rev. 2.0 dissolved	03/12/2021			03/12/2021 14:52	Patrick M. Roche	2231117
EPA 8321B	03/12/2021	03/12/2021 14:30	Hoor Shaik	03/15/2021 12:20	Juyoung Kim	2231261
	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/16/2021 13:08	Rebecca Ware	2231261
	03/12/2021	03/16/2021 10:30	Rebecca Ware	03/24/2021 13:57	Rebecca Ware	2231261
SM 2120 B-2011	03/12/2021			03/12/2021 16:14	Benjamin T. Nordmann	2231115
SM 2320 B-2011	03/12/2021			03/17/2021 04:23	Dale L. Simmons	2231115
SM 2540 C-2011	03/12/2021			03/15/2021 15:01	Yijie Li	2231115
SM 2540 D-2011	03/12/2021			03/15/2021 15:01	Yijie Li	2231115
SM 4500 F-C-2011	03/12/2021			03/17/2021 04:23	Dale L. Simmons	2231115
SM 5310 B-2011	03/12/2021			03/23/2021 04:16	Madeline Gruver	2231116