

Chemical Analysis Report

SE-DIST-2021-03-18-01

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

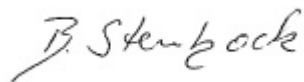
Event Description: **SMP - Okeechobee Area Pickup**
Request ID: **RQ-2021-03-15-65**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 08-APR-2021 14:58



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: Fort Drum Creek @ 441

Collection Date/Time: 03/17/2021 10:10

Field ID: G3SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2232436	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P395169	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P395465	
		Sulfate	0.29	I	mg SO4/L	P395467	
	SM 2120 B-2011	Color (true)	160		PCU	P395173	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P395361	
	SM 2540 C-2011	TDS	85		mg/L	P395619	
	SM 2540 D-2011	TSS	2	I	mg/L	P395623	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P395362	
2232438	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P395766	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P395533	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P395288	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P395325	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P395581	
2232440	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.059		mg P/L	P395167	

Ref. Method and Comment:

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

Sample Location: L-65 Upstream of S-153

Collection Date/Time: 03/17/2021 12:30

Field ID: G1SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2232437	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P395169	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P395465	
		Sulfate	33		mg SO4/L	P395467	
	SM 2120 B-2011	Color (true)	210		PCU	P395173	
	SM 2320 B-2011	Total Alkalinity	147		mg CaCO3/L	P395361	
	SM 2540 C-2011	TDS	512	A	mg/L	P395619	
	SM 2540 D-2011	TSS	2	UA	mg/L	P395623	
	SM 4500 F-C-2011	Fluoride	0.24		mg F/L	P395362	
2232439	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P395766	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P395533	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P395288	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P395325	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P395581	
2232441	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.25		mg P/L	P395167	

Ref. Method and Comment:

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

Sample Location: Sweetwater Branch @ 441

Collection Date/Time: 03/17/2021 10:00

Field ID: G3SE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2232448	EPA 8321B	2,4-D	0.0020	U	ug/L	P395071	
		Acesulfame K	0.10	U	ug/L	P395198	MS
		2,4,5-T	0.0040	U	ug/L	P395071	
		AMPA	0.10	U	ug/L	P395198	
		Sucralose	0.010	U	ug/L	P395198	
		Acetaminophen	0.0080	U	ug/L	P395071	
		Acetamiprid	0.0020	U	ug/L	P395071	
		Endothall	0.25	U	ug/L	P395198	
		Glufosinate	0.10	U	ug/L	P395198	
		Glyphosate	0.10	U	ug/L	P395198	
		Afidopyropen	0.0020	U	ug/L	P395071	
		Bentazon	8.0E-04	U	ug/L	P395071	
		Benzovindiflupyr	0.0020	U	ug/L	P395071	
		Carbamazepine	8.0E-04	U	ug/L	P395071	
		Clothianidin	0.0020	U	ug/L	P395071	
		Dinotefuran	0.0020	U	ug/L	P395071	
		Diuron	0.0020	U	ug/L	P395071	
		Fenuron	0.016	U	ug/L	P395071	
		Fluridone	8.0E-04	U	ug/L	P395071	
		Imazapyr	0.011	I	ug/L	P395071	
		Hydrocodone	0.0020	U	ug/L	P395071	
		Ibuprofen	0.020	U	ug/L	P395071	
		Imidacloprid	0.0020	U	ug/L	P395071	
		Linuron	0.0040	U	ug/L	P395071	
		Mandestrobin	0.0020	U	ug/L	P395071	
		MCPP	0.0020	U	ug/L	P395071	
		Naproxen	0.0080	U	ug/L	P395071	
		Primidone	0.0040	U	ug/L	P395071	
		Pyraclostrobin	0.0020	U	ug/L	P395071	
		Thiamethoxam	0.0020	U	ug/L	P395071	
		Tolfenpyrad	0.0020	U	ug/L	P395071	
		Triclopyr	0.0040	U	ug/L	P395071	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395169

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395465

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395467

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395766

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395533

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395288

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395325

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395167

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

Reference Method: EPA 8321B
Batch ID: P395071

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: P395071

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: P395198

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: P395173

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P395361

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

Reference Method: SM 2540 C-2011

Batch ID: P395619

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P395623

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395362

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395581

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: P395465

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395467

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395766

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395533

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395288

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395325

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395167

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

Reference Method: EPA 8321B
Batch ID: P395071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	30 - 160
2,4,5-T	103		P	30 - 160
Acetaminophen	92.2		P	30 - 160
Acetamiprid	109		P	30 - 160
Afidopyropen	79.1		P	30 - 160
Bentazon	91.2		P	30 - 160
Benzovindiflupyr	92.0		P	30 - 160
Carbamazepine	105		P	30 - 160
Clothianidin	103		P	30 - 160
Dinotefuran	106		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P395071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	78.3		P	30 - 160
Fenuron	107		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	102		P	30 - 160
Imazapyr	112		P	30 - 160
Imidacloprid	112		P	30 - 160
Linuron	85.5		P	30 - 160
Mandestrobin	96.1		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	56.1		P	30 - 160
Primidone	99.7		P	30 - 160
Pyraclostrobin	89.1		P	30 - 160
Thiamethoxam	110		P	30 - 160
Tolfenpyrad	62.8		P	30 - 160
Triclopyr	107		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	102		P	40 - 150
Endothall	120		P	40 - 150
Glufosinate	121		P	40 - 150
Glyphosate	137		P	40 - 140
Sucralose	97.5		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P395173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P395361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P395362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232292	Chloride	101		P	90 - 110
2232383	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232292	Sulfate	100		P	90 - 110
2232383	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232421	Ammonia-N	97.8	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232384	Kjeldahl Nitrogen	113	112	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232421	NO2NO3-N	99.8	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232400	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232419	O-Phosphate-P	99.3	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P395071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	2,4-D	116	124	P/P	30 - 160
2231596	2,4,5-T	98.9	103	P/P	30 - 160
2231596	Acetaminophen	94.8	103	P/P	30 - 160
2231596	Acetamiprid	107	97.0	P/P	30 - 160
2231596	Afidopyrophen	78.5	65.5	P/P	30 - 160
2231596	Bentazon	67.7	70.4	P/P	30 - 160
2231596	Benzovindiflupyr	89.4	92.9	P/P	30 - 160
2231596	Carbamazepine	95.3	91.9	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P395071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	Clothianidin	113	101	P/P	30 - 160
2231596	Dinotefuran	109	95.4	P/P	30 - 160
2231596	Diuron	64.9	67.1	P/P	30 - 160
2231596	Fenuron	93.9	97.0	P/P	30 - 160
2231596	Fluridone	87.5	90.0	P/P	30 - 160
2231596	Hydrocodone	108	104	P/P	30 - 160
2231596	Ibuprofen	82.1	83.6	P/P	30 - 160
2231596	Imazapyr	118	113	P/P	30 - 160
2231596	Imidacloprid	137	135	P/P	30 - 160
2231596	Linuron	74.3	73.9	P/P	30 - 160
2231596	Mandestrobin	86.6	88.4	P/P	30 - 160
2231596	MCPP	107	112	P/P	30 - 160
2231596	Naproxen	73.6	80.1	P/P	30 - 160
2231596	Primidone	101	99.6	P/P	30 - 160
2231596	Pyraclostrobin	85.7	84.9	P/P	30 - 160
2231596	Thiamethoxam	135	126	P/P	30 - 160
2231596	Tolfenpyrad	58.0	59.2	P/P	30 - 160
2231596	Triclopyr	102	103	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P395198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232387	Acesulfame K	256	293	F/F	40 - 150
2232387	AMPA	115	115	P/P	40 - 150
2232387	Endothall	98.2	81.7	P/P	40 - 150
2232387	Glufosinate	121	121	P/P	40 - 150
2232387	Glyphosate	89.3	114	P/P	40 - 140
2232387	Sucralose	65.9	72.5	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P395362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232503	Fluoride	101	98.8	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P395581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2232673	Organic Carbon	95.6	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232420	Turbidity	3.51	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232292	Chloride	0.346	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P395467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232292	Sulfate	1.50	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232421	Ammonia-N	1.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232384	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232421	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232400	Total-P	1.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232419	O-Phosphate-P	0.707	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P395071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231596	2,4-D	7.04	Spike	P	0 - 30
2231596	2,4,5-T	3.76	Spike	P	0 - 30
2231596	Acetaminophen	7.94	Spike	P	0 - 30
2231596	Acetamiprid	9.90	Spike	P	0 - 30
2231596	Afidopyropen	18.0	Spike	P	0 - 30
2231596	Bentazon	3.94	Spike	P	0 - 30
2231596	Benzovindiflupyr	3.90	Spike	P	0 - 30
2231596	Carbamazepine	3.55	Spike	P	0 - 30
2231596	Clothianidin	10.8	Spike	P	0 - 30
2231596	Dinotefuran	12.9	Spike	P	0 - 30
2231596	Diuron	3.40	Spike	P	0 - 30
2231596	Fenuron	3.30	Spike	P	0 - 30
2231596	Fluridone	2.78	Spike	P	0 - 30
2231596	Hydrocodone	4.03	Spike	P	0 - 30
2231596	Ibuprofen	1.90	Spike	P	0 - 30
2231596	Imazapyr	4.41	Spike	P	0 - 30
2231596	Imidacloprid	1.59	Spike	P	0 - 30
2231596	Linuron	0.482	Spike	P	0 - 30
2231596	Mandestrobin	2.10	Spike	P	0 - 30
2231596	MCP	5.39	Spike	P	0 - 30
2231596	Naproxen	8.42	Spike	P	0 - 30
2231596	Primidone	1.68	Spike	P	0 - 30
2231596	Pyraclostrobin	0.919	Spike	P	0 - 30
2231596	Thiamethoxam	6.85	Spike	P	0 - 30
2231596	Tolfenpyrad	2.03	Spike	P	0 - 30
2231596	Triclopyr	1.54	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P395198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232387	Acesulfame K	13.4	Spike	P	0 - 30
2232387	AMPA	0.119	Spike	P	0 - 30
2232387	Endothall	18.3	Spike	P	0 - 30
2232387	Glufosinate	0.464	Spike	P	0 - 30
2232387	Glyphosate	24.3	Spike	P	0 - 30
2232387	Sucralose	9.40	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P395173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232420	Color (true)	0.708	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P395361

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: P395361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232503	Total Alkalinity	0.780	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P395619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232437	TDS	1.37	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P395362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232503	Fluoride	1.88	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2232673	Organic Carbon	0.0820	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2232448

Field Sample ID: G3SE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.7	P	30 - 160
EPA 8321B	Diuron-d6	52.4	P	30 - 160
EPA 8321B	Endothall-d6	124	P	40 - 160
EPA 8321B	Endothall-d6	124	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	75.3	P	30 - 160
EPA 8321B	Primidone-d5	86.2	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	30 - 160
EPA 8321B	Sucralose-d6	98.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104138

Included Lab Sample IDs: 2232440, 2232441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104139

Included Lab Sample IDs: 2232436, 2232437

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

Reference Method: SM 2120 B-2011

Run ID: A104141

Included Lab Sample IDs: 2232436, 2232437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104195

Included Lab Sample IDs: 2232438, 2232439

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

Reference Method: EPA 8321B

Run ID: A104199

Included Lab Sample IDs: 2232448

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	140	97.1	P/P	60 - 160
AMPA	113	120	P/P	60 - 160
Endothall	81.0	96.7	P/P	60 - 160
Glufosinate	134	122	P/P	60 - 160
Glyphosate	151	140	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104216

Included Lab Sample IDs: 2232436, 2232437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.5	P/P	90 - 110
Sulfate	99.6	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A104224

Included Lab Sample IDs: 2232436, 2232437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A104224

Included Lab Sample IDs: 2232436, 2232437

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104248

Included Lab Sample IDs: 2232438, 2232439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104272

Included Lab Sample IDs: 2232448

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.1	100	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A104297

Included Lab Sample IDs: 2232448

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	124	P/P	50 - 150
2,4,5-T	99.6	110	P/P	50 - 150
Acetaminophen	111	106	P/P	60 - 160
Acetamiprid	108	111	P/P	50 - 150
Afidopyropen	85.5	103	P/P	50 - 150
Bentazon	104	92.1	P/P	50 - 160
Benzovindiflupyr	114	113	P/P	50 - 160
Carbamazepine	106	110	P/P	60 - 150
Clothianidin	107	115	P/P	60 - 150
Dinotefuran	113	123	P/P	50 - 150
Diuron	109	113	P/P	60 - 160
Fenuron	104	104	P/P	60 - 150
Fluridone	105	118	P/P	60 - 160
Hydrocodone	111	109	P/P	60 - 150
Ibuprofen	89.1	97.4	P/P	50 - 160
Imazapyr	104	95.8	P/P	50 - 160
Imidacloprid	101	103	P/P	60 - 150
Linuron	102	106	P/P	60 - 150
Mandestrobin	107	113	P/P	50 - 150
MCPP	106	123	P/P	50 - 150
Naproxen	99.0	93.2	P/P	50 - 160
Primidone	98.8	104	P/P	60 - 150
Pyraclostrobin	108	114	P/P	60 - 150
Thiamethoxam	115	116	P/P	50 - 150
Tolfenpyrad	108	111	P/P	60 - 150
Triclopyr	94.6	115	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104316

Included Lab Sample IDs: 2232438, 2232439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104367

Included Lab Sample IDs: 2232438, 2232439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	94.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104401

Included Lab Sample IDs: 2232438, 2232439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	98.4	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					3.51	
EPA 300.0 Rev. 2.1	Chloride	101	101	101		0.346	
	Sulfate	100	100	98.2		1.50	
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.8	99.4			1.52
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	113	112			1.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.8	99.8			0.0
EPA 365.1 Rev. 2.0	Total-P	105	108	106			1.46
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	99.3	98.6			0.707
EPA 8321B	2,4-D	133	116	124			7.04
	2,4,5-T	103	98.9	103			3.76
	Acesulfame K	104	256	293			13.4
	Acetaminophen	92.2	94.8	103			7.94
	Acetamiprid	109	107	97.0			9.90
	Afidopyropen	79.1	78.5	65.5			18.0
	AMPA	102	115	115			0.119
	Bentazon	91.2	67.7	70.4			3.94
	Benzovindiflupyr	92.0	89.4	92.9			3.90
	Carbamazepine	105	95.3	91.9			3.55
	Clothianidin	103	113	101			10.8
	Dinotefuran	106	109	95.4			12.9
	Diuron	78.3	64.9	67.1			3.40
	Endothall	120	98.2	81.7			18.3
	Fenuron	107	93.9	97.0			3.30
	Fluridone	101	87.5	90.0			2.78
	Glufosinate	121	121	121			0.464
	Glyphosate	137	89.3	114			24.3
	Hydrocodone	105	108	104			4.03
	Ibuprofen	102	82.1	83.6			1.90
	Imazapyr	112	118	113			4.41
	Imidacloprid	112	137	135			1.59
	Linuron	85.5	74.3	73.9			0.482
	Mandestrobin	96.1	86.6	88.4			2.10
	MCPP	123	107	112			5.39
	Naproxen	56.1	73.6	80.1			8.42
	Primidone	99.7	101	99.6			1.68
	Pyraclostrobin	89.1	85.7	84.9			0.919
	Sucralose	97.5	65.9	72.5			9.40
	Thiamethoxam	110	135	126			6.85
	Tolfenpyrad	62.8	58.0	59.2			2.03
	Triclopyr	107	102	103			1.54
SM 2120 B-2011	Color (true)	99.2				0.708	
SM 2320 B-2011	Total Alkalinity	99.8				0.780	
SM 2540 C-2011	TDS					1.37	
SM 4500 F-C-2011	Fluoride	100	101	98.8			1.88
SM 5310 B-2011	Organic Carbon	95.0	95.6	95.8			0.0820

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2232436, 2232437
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2232436, 2232437
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2232436, 2232437
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2232438, 2232439

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2232438, 2232439
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2232438, 2232439
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2232438, 2232439
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2232440, 2232441
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2232448
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2232448
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2232436, 2232437
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2232436, 2232437
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2232436, 2232437
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2232436, 2232437
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2232436, 2232437
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2232438, 2232439

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	03/18/2021			03/18/2021 15:47	Yen Ta	2232436, 2232437
EPA 300.0 Rev. 2.1	03/18/2021			03/24/2021 18:46	Lipi Saha	2232436
	03/18/2021			03/24/2021 18:58	Lipi Saha	2232437
EPA 350.1 Rev. 2.0	03/18/2021			03/31/2021 18:57	Ping Hua	2232438
	03/18/2021			03/31/2021 18:59	Ping Hua	2232439
EPA 351.2 Rev. 2.0	03/18/2021	03/26/2021 13:02	Benjamin T. Nordmann	03/30/2021 11:02	Virginia P. Brown	2232438
	03/18/2021	03/26/2021 13:02	Benjamin T. Nordmann	03/30/2021 11:03	Virginia P. Brown	2232439
EPA 353.2 Rev. 2.0	03/18/2021			03/22/2021 11:54	Beverly Y. Sanders	2232438
	03/18/2021			03/22/2021 11:56	Beverly Y. Sanders	2232439
EPA 365.1 Rev. 2.0	03/18/2021	03/23/2021 09:29	Yen Ta	03/24/2021 12:17	Shengyu Ding	2232438
	03/18/2021	03/23/2021 09:29	Yen Ta	03/24/2021 12:18	Shengyu Ding	2232439
EPA 365.1 Rev. 2.0 dissolved	03/18/2021			03/18/2021 15:31	Patrick M. Roche	2232440
	03/18/2021			03/18/2021 15:32	Patrick M. Roche	2232441
EPA 8321B	03/18/2021	03/18/2021 14:00	Hoor Shaik	03/26/2021 09:24	Juyoung Kim	2232448
	03/18/2021	03/19/2021 11:00	Rebecca Ware	03/19/2021 13:17	Rebecca Ware	2232448
	03/18/2021	03/19/2021 11:00	Rebecca Ware	03/24/2021 20:15	Rebecca Ware	2232448
SM 2120 B-2011	03/18/2021			03/18/2021 17:13	Benjamin T. Nordmann	2232436
	03/18/2021			03/18/2021 17:14	Benjamin T. Nordmann	2232437
SM 2320 B-2011	03/18/2021			03/19/2021 22:47	Dale L. Simmons	2232436
	03/18/2021			03/19/2021 23:03	Dale L. Simmons	2232437
SM 2540 C-2011	03/18/2021			03/22/2021 14:26	Yijie Li	2232436, 2232437
SM 2540 D-2011	03/18/2021			03/22/2021 14:26	Yijie Li	2232436, 2232437
SM 4500 F-C-2011	03/18/2021			03/19/2021 22:47	Dale L. Simmons	2232436
	03/18/2021			03/19/2021 23:03	Dale L. Simmons	2232437
SM 5310 B-2011	03/18/2021			03/27/2021 04:13	Madeline Gruver	2232438
	03/18/2021			03/27/2021 04:23	Madeline Gruver	2232439