

Chemical Analysis Report

NE-DIST-2021-01-29-01

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

Event Description: **St.Augustine 2021**
Request ID: **RQ-2021-01-25-09**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-FEB-2021 10:35



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: Moses Creek at Preserve Dock

Collection Date/Time: 01/28/2021 11:30

Field ID: G5NE0004

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2222361	EPA 180.1 Rev. 2.0	Turbidity	6.7	A	NTU	P393157	
	EPA 300.0 Rev. 2.1	Bromide	62		mg Br/L	P393555	
		Sulfate	2.3E+03		mg SO4/L	P393524	
	SM 2320 B-2011	Total Alkalinity	108		mg CaCO3/L	P393340	
	SM 2540 D-2011	TSS	11		mg/L	P393541	
	SM 4500 F-C-2011	Fluoride	1.0		mg F/L	P393342	
2222362	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P393513	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P393545	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393289	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P393396	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P393265	
2222363	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P393160	

Sample Location: Moses Cr at US 1

Collection Date/Time: 01/28/2021 12:40

Field ID: 27010050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2222369	EPA 8321B	2,4-D	0.0020	U	ug/L	P393145	
		Acesulfame K	0.10	U	ug/L	P393178	MS
		AMPA	0.10	U	ug/L	P393178	
		Sucralose	0.013	I	ug/L	P393178	
		Acetaminophen**	0.0080	U	ug/L	P393145	
		Acetamiprid**	0.0020	U	ug/L	P393145	
		Endothall	0.25	U	ug/L	P393178	
		Glufosinate	0.10	U	ug/L	P393178	
		Glyphosate	0.10	U	ug/L	P393178	
		Afidopyropen**	0.0020	U	ug/L	P393145	
		Bentazon	0.017		ug/L	P393145	
		Benzovindiflupyr**	0.0020	U	ug/L	P393145	
		Carbamazepine**	8.0E-04	U	ug/L	P393145	
		Clothianidin**	0.0020	U	ug/L	P393145	
		Dinotefuran**	0.0020	U	ug/L	P393145	
		Diuron	0.0020	U	ug/L	P393145	
		Fenuron	0.016	U	ug/L	P393145	
		Fluridone**	0.0019	I	ug/L	P393145	
		Imazapyr**	0.10		ug/L	P393145	
		Hydrocodone**	0.0020	U	ug/L	P393145	
		Ibuprofen**	0.020	U	ug/L	P393145	
		Imidacloprid	0.0072	I	ug/L	P393145	
		Linuron	0.0040	U	ug/L	P393145	
		Mandestrobin**	0.0020	U	ug/L	P393145	
		MCPP	0.0020	U	ug/L	P393145	
		Naproxen**	0.0080	U	ug/L	P393145	
		Primidone**	0.0040	U	ug/L	P393145	
		Pyraclostrobin**	0.0020	U	ug/L	P393145	
		Thiamethoxam**	0.0020	U	ug/L	P393145	
		Tolfenpyrad**	0.0020	U	ug/L	P393145	
		Triclopyr**	0.0040	U	ug/L	P393145	

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.

Sample Location: Moses Creek @ Cr 206

Collection Date/Time: 01/28/2021 13:00

Field ID: 27010051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2222370	EPA 8321B	2,4-D	0.0020	U	ug/L	P393145	
		Acesulfame K	0.10	U	ug/L	P393178	MS
		AMPA	0.10	U	ug/L	P393178	
		Sucralose	0.010	U	ug/L	P393178	
		Acetaminophen**	0.0080	U	ug/L	P393145	
		Acetamiprid**	0.0020	U	ug/L	P393145	
		Endothall	0.25	U	ug/L	P393178	
		Glufosinate	0.10	U	ug/L	P393178	
		Glyphosate	0.10	U	ug/L	P393178	
		Afidopyropen**	0.0020	U	ug/L	P393145	
		Bentazon	8.0E-04	U	ug/L	P393145	
		Benzovindiflupyr**	0.0020	U	ug/L	P393145	
		Carbamazepine**	8.0E-04	U	ug/L	P393145	
		Clothianidin**	0.0020	U	ug/L	P393145	
		Dinotefuran**	0.0020	U	ug/L	P393145	
		Diuron	0.0020	U	ug/L	P393145	
		Fenuron	0.016	U	ug/L	P393145	
		Fluridone**	8.0E-04	U	ug/L	P393145	
		Imazapyr**	0.17		ug/L	P393145	
		Hydrocodone**	0.0020	U	ug/L	P393145	
		Ibuprofen**	0.020	U	ug/L	P393145	
		Imidacloprid	0.0020	U	ug/L	P393145	
		Linuron	0.0040	U	ug/L	P393145	
		Mandestrobin**	0.0020	U	ug/L	P393145	
		MCPP	0.0020	U	ug/L	P393145	
		Naproxen**	0.0080	U	ug/L	P393145	
		Primidone**	0.0040	U	ug/L	P393145	
		Pyraclostrobin**	0.0020	U	ug/L	P393145	
		Thiamethoxam**	0.0020	U	ug/L	P393145	
		Tolfenpyrad**	0.0020	U	ug/L	P393145	
		Triclopyr**	0.0040	U	ug/L	P393145	

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: P393157

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393524

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393555

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393545

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393289

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393396

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393160

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

Reference Method: EPA 8321B
Batch ID: P393145

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P393145

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P393178

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 2320 B-2011

Batch ID: P393340

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

Reference Method: SM 2540 D-2011

Batch ID: P393541

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P393342

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P393265

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: P393524

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393555

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393545

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393289

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393396

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393160

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

Reference Method: EPA 8321B
Batch ID: P393145

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	30 - 160
Acetaminophen	83.5		P	30 - 160
Acetamiprid	85.3		P	30 - 160
Afidopyropen	52.7		P	30 - 160
Bentazon	85.8		P	30 - 160
Benzovindiflupyr	74.7		P	30 - 160
Carbamazepine	101		P	30 - 160
Clothianidin	96.8		P	30 - 160
Dinotefuran	71.4		P	30 - 160
Diuron	80.0		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P393145

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	100		P	30 - 160
Fluridone	82.3		P	30 - 160
Hydrocodone	94.4		P	30 - 160
Ibuprofen	59.0		P	30 - 160
Imazapyr	104		P	30 - 160
Imidacloprid	93.3		P	30 - 160
Linuron	79.0		P	30 - 160
Mandestrobin	86.6		P	30 - 160
MCPP	90.3		P	30 - 160
Naproxen	56.8		P	30 - 160
Primidone	87.3		P	30 - 160
Pyraclostrobin	75.8		P	30 - 160
Thiamethoxam	93.5		P	30 - 160
Tolfenpyrad	44.3		P	30 - 160
Triclopyr	84.3		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P393178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
AMPA	99.5		P	40 - 150
Endothall	115		P	40 - 150
Glufosinate	99.8		P	40 - 150
Glyphosate	95.4		P	40 - 140
Sucralose	110		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P393340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P393342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P393265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222225	Sulfate	102		P	90 - 110
2222389	Sulfate	96.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222197	Bromide	101		P	90 - 110
2222279	Bromide	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222362	Ammonia-N	108	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222881	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2221936	NO2NO3-N	100	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222201	Total-P	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222363	O-Phosphate-P	98.2	99.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P393145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222298	Acetaminophen	105	106	P/P	30 - 160
2222298	Acetamiprid	103	104	P/P	30 - 160
2222298	Afidopyropen	77.0	73.5	P/P	30 - 160
2222298	Benzovindiflupyr	69.8	73.2	P/P	30 - 160
2222298	Carbamazepine	86.8	82.4	P/P	30 - 160
2222298	Clothianidin	91.1	106	P/P	30 - 160
2222298	Dinotefuran	98.9	99.3	P/P	30 - 160
2222298	Diuron	66.3	56.9	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P393145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222298	Fenuron	81.5	83.2	P/P	30 - 160
2222298	Fluridone	82.1	59.6	P/P	30 - 160
2222298	Hydrocodone	106	109	P/P	30 - 160
2222298	Ibuprofen	79.6	76.5	P/P	30 - 160
2222298	Imazapyr	102	80.1	P/P	30 - 160
2222298	Imidacloprid	133	138	P/P	30 - 160
2222298	Linuron	70.5	66.1	P/P	30 - 160
2222298	Mandestrobin	82.3	80.6	P/P	30 - 160
2222298	MCPD	84.2	80.5	P/P	30 - 160
2222298	Naproxen	78.6	85.0	P/P	30 - 160
2222298	Primidone	90.4	90.2	P/P	30 - 160
2222298	Pyraclostrobin	72.6	74.6	P/P	30 - 160
2222298	Thiamethoxam	124	128	P/P	30 - 160
2222298	Tolfenpyrad	46.7	52.7	P/P	30 - 160
2222298	Triclopyr	69.7	76.2	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P393178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222323	Acesulfame K	24.8	25.5	F/F	40 - 150
2222323	AMPA	124	123	P/P	40 - 150
2222323	Endothall	114	122	P/P	40 - 150
2222323	Glufosinate	95.5	92.7	P/P	40 - 150
2222323	Glyphosate	80.0	77.0	P/P	40 - 140
2222323	Sucralose	115	115	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P393342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222276	Fluoride	97.3	97.3	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P393265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2222201	Organic Carbon	99.4	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222361	Turbidity	0.445	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222389	Sulfate	2.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222279	Bromide	0.371	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222362	Ammonia-N	2.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222881	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2221936	NO2NO3-N	0.454	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222201	Total-P	1.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222363	O-Phosphate-P	0.959	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P393145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222298	2,4-D	4.73	Spike	P	0 - 30
2222298	Acetaminophen	1.21	Spike	P	0 - 30
2222298	Acetamiprid	0.744	Spike	P	0 - 30
2222298	Afidopyropen	4.72	Spike	P	0 - 30
2222298	Bentazon	2.76	Spike	P	0 - 30
2222298	Benzovindiflupyr	4.81	Spike	P	0 - 30
2222298	Carbamazepine	4.66	Spike	P	0 - 30
2222298	Clothianidin	15.5	Spike	P	0 - 30
2222298	Dinotefuran	0.363	Spike	P	0 - 30
2222298	Diuron	10.3	Spike	P	0 - 30
2222298	Fenuron	2.09	Spike	P	0 - 30
2222298	Fluridone	25.2	Spike	P	0 - 30
2222298	Hydrocodone	2.54	Spike	P	0 - 30
2222298	Ibuprofen	3.86	Spike	P	0 - 30
2222298	Imazapyr	11.4	Spike	P	0 - 30
2222298	Imidacloprid	3.43	Spike	P	0 - 30
2222298	Linuron	6.49	Spike	P	0 - 30
2222298	Mandestrobin	2.00	Spike	P	0 - 30
2222298	MCPP	4.53	Spike	P	0 - 30
2222298	Naproxen	7.88	Spike	P	0 - 30
2222298	Primidone	0.144	Spike	P	0 - 30
2222298	Pyraclostrobin	2.71	Spike	P	0 - 30
2222298	Thiamethoxam	2.91	Spike	P	0 - 30
2222298	Tolfenpyrad	12.1	Spike	P	0 - 30
2222298	Triclopyr	9.00	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P393178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222323	Acesulfame K	2.71	Spike	P	0 - 30
2222323	AMPA	1.23	Spike	P	0 - 30
2222323	Endothall	6.76	Spike	P	0 - 30
2222323	Glufosinate	3.01	Spike	P	0 - 30
2222323	Glyphosate	3.80	Spike	P	0 - 30
2222323	Sucralose	0.452	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P393340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222276	Total Alkalinity	2.37	Sample	P	0 - 8.1

Reference Method: SM 2540 D-2011
Batch ID: P393541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222089	TSS	8.00	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P393342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222276	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222201	Organic Carbon	0.134	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2222369

Field Sample ID: 27010050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.4	P	30 - 160
EPA 8321B	Diuron-d6	35.9	P	30 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	77.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	77.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	73.2	P	30 - 160
EPA 8321B	Primidone-d5	65.9	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Lab Sample ID: 2222370

Field Sample ID: 27010051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	67.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.9	P	30 - 160
EPA 8321B	Diuron-d6	35.3	P	30 - 160
EPA 8321B	Endothall-d6	102	P	40 - 160
EPA 8321B	Endothall-d6	102	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	70.7	P	30 - 160
EPA 8321B	Primidone-d5	56.9	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103324

Included Lab Sample IDs: 2222361

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103325

Included Lab Sample IDs: 2222363

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

Reference Method: EPA 8321B

Run ID: A103373

Included Lab Sample IDs: 2222369, 2222370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.5	97.8	P/P	60 - 160
AMPA	108	112	P/P	60 - 160
Endothall	103	110	P/P	60 - 160
Glufosinate	85.6	78.9	P/P	60 - 160
Glyphosate	106	100	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A103374

Included Lab Sample IDs: 2222362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103386

Included Lab Sample IDs: 2222362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103397

Included Lab Sample IDs: 2222361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.0	93.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103397

Included Lab Sample IDs: 2222361

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A103413

Included Lab Sample IDs: 2222369, 2222370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	99.4	P/P	50 - 150
Acetaminophen	95.2	99.9	P/P	60 - 160
Acetamiprid	108	116	P/P	50 - 150
Afidopyropen	113	115	P/P	50 - 150
Bentazon	122	127	P/P	50 - 160
Benzovindiflupyr	101	107	P/P	50 - 160
Carbamazepine	102	114	P/P	60 - 150
Clothianidin	101	84.1	P/P	60 - 150
Dinotefuran	109	98.8	P/P	50 - 150
Diuron	130	132	P/P	60 - 160
Fenuron	110	108	P/P	60 - 150
Fluridone	135	127	P/P	60 - 160
Hydrocodone	107	105	P/P	60 - 150
Ibuprofen	78.4	75.7	P/P	50 - 160
Imazapyr	86.4	97.1	P/P	50 - 160
Imidacloprid	96.4	95.8	P/P	60 - 150
Linuron	118	121	P/P	60 - 150
Mandestrobin	107	112	P/P	50 - 150
MCPP	110	110	P/P	50 - 150
Naproxen	89.2	131	P/P	50 - 160
Primidone	94.2	98.4	P/P	60 - 150
Pyraclostrobin	110	107	P/P	60 - 150
Thiamethoxam	104	106	P/P	50 - 150
Tolfenpyrad	107	106	P/P	60 - 150
Triclopyr	119	107	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103475

Included Lab Sample IDs: 2222362

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103478

Included Lab Sample IDs: 2222362

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103481

Included Lab Sample IDs: 2222361

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103482

Included Lab Sample IDs: 2222361

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

Reference Method: EPA 8321B

Run ID: A103516

Included Lab Sample IDs: 2222369, 2222370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	109	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103527

Included Lab Sample IDs: 2222362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	110	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.445	
EPA 300.0 Rev. 2.1	Bromide	103	101	101	101			0.371
	Sulfate	100	96.1	102			2.06	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	108	104				2.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	105	107				1.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	100	99.8				0.454
EPA 365.1 Rev. 2.0	Total-P	99.7	102	100				1.61
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.2	99.4				0.959
EPA 8321B	2,4-D	103						4.73
	Acesulfame K	107	24.8	25.5				2.71
	Acetaminophen	83.5	105	106				1.21
	Acetamiprid	85.3	103	104				0.744
	Afidopyropen	52.7	77.0	73.5				4.72
	AMPA	99.5	124	123				1.23
	Bentazon	85.8						2.76
	Benzovindiflupyr	74.7	69.8	73.2				4.81
	Carbamazepine	101	86.8	82.4				4.66
	Clothianidin	96.8	91.1	106				15.5
	Dinotefuran	71.4	98.9	99.3				0.363
	Diuron	80.0	66.3	56.9				10.3
	Endothall	115	114	122				6.76
	Fenuron	100	81.5	83.2				2.09
	Fluridone	82.3	82.1	59.6				25.2
	Glufosinate	99.8	95.5	92.7				3.01
	Glyphosate	95.4	80.0	77.0				3.80
	Hydrocodone	94.4	106	109				2.54
	Ibuprofen	59.0	79.6	76.5				3.86
	Imazapyr	104	102	80.1				11.4
	Imidacloprid	93.3	133	138				3.43
	Linuron	79.0	70.5	66.1				6.49
	Mandestrobin	86.6	82.3	80.6				2.00
	MCPP	90.3	84.2	80.5				4.53
	Naproxen	56.8	78.6	85.0				7.88
	Primidone	87.3	90.4	90.2				0.144
	Pyraclostrobin	75.8	72.6	74.6				2.71
	Sucralose	110	115	115				0.452
	Thiamethoxam	93.5	124	128				2.91
	Tolfenpyrad	44.3	46.7	52.7				12.1
	Triclopyr	84.3	69.7	76.2				9.00
SM 2320 B-2011	Total Alkalinity	97.8					2.37	
SM 2540 D-2011	TSS						8.00	
SM 4500 F-C-2011	Fluoride	97.3	97.3	97.3				0.0
SM 5310 B-2011	Organic Carbon	100	99.4	99.2				0.134

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2222361
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2222361
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2222361
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2222362
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2222362
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2222362

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2222362
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2222363
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2222369, 2222370
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2222369, 2222370
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2222361
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2222361
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2222361
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2222362

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	01/29/2021			01/29/2021 15:23	Yen Ta	2222361
EPA 300.0 Rev. 2.1	01/29/2021			02/09/2021 00:20	Lipi Saha	2222361
	01/29/2021			02/09/2021 02:21	Lipi Saha	2222361
EPA 350.1 Rev. 2.0	01/29/2021			02/08/2021 17:05	Ping Hua	2222362
EPA 351.2 Rev. 2.0	01/29/2021	02/09/2021 11:41	Yen Ta	02/10/2021 17:07	Julia Storbeck	2222362
EPA 353.2 Rev. 2.0	01/29/2021			02/03/2021 09:07	Beverly Y. Sanders	2222362
EPA 365.1 Rev. 2.0	01/29/2021	02/04/2021 17:06	Madeline Gruver	02/08/2021 13:31	Shengyu Wang	2222362
EPA 365.1 Rev. 2.0 dissolved	01/29/2021			01/29/2021 16:38	Ping Hua	2222363
EPA 8321B	01/29/2021	02/01/2021 11:30	Rebecca Ware	02/02/2021 11:15	Rebecca Ware	2222369
	01/29/2021	02/01/2021 11:30	Rebecca Ware	02/02/2021 11:28	Rebecca Ware	2222370
	01/29/2021	02/01/2021 11:30	Rebecca Ware	02/09/2021 23:33	Rebecca Ware	2222369
	01/29/2021	02/01/2021 11:30	Rebecca Ware	02/09/2021 23:45	Rebecca Ware	2222370
	01/29/2021	02/02/2021 14:00	Hoor Shaik	02/03/2021 03:51	Juyoung Kim	2222369
	01/29/2021	02/02/2021 14:00	Hoor Shaik	02/03/2021 04:26	Juyoung Kim	2222370
SM 2320 B-2011	01/29/2021			02/03/2021 21:52	Dale L. Simmons	2222361
SM 2540 D-2011	01/29/2021			02/02/2021 14:20	Yijie Li	2222361
SM 4500 F-C-2011	01/29/2021			02/03/2021 20:33	Dale L. Simmons	2222361
SM 5310 B-2011	01/29/2021			02/02/2021 12:06	Madeline Gruver	2222362