

Chemical Analysis Report

NE-DIST-2023-01-17-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Ormond Boat 2023**
Request ID: **RQ-2023-01-09-30**
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: Liang Lin, Environmental Administrator

Date Certified: 09-FEB-2023 10:27

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

NON-CONFORMANCE REPORT INCLUDED

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: Unnamed Branch 0.5 Mi Above Tomoka River **Collection Date/Time: 01/12/2023 10:20**

Field ID: G5NE0609

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381168	SM 2320 B-2011	Total Alkalinity	146		mg CaCO3/L	P425022	
	SM 2540 D-2015	TSS	3	U	mg/L	P424891	
	SM 4500-F- C-2011	Fluoride	0.42	J	mg F/L	P425447	MS, RPD
2381169	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P425206	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P424940	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P424901	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P424789	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P425051	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500-F- C-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Groover Branch @ Airport Road Bridge

Collection Date/Time: 01/12/2023 11:00

Field ID: G5NE0610

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381170	EPA 300.0 Rev. 2.1	Chloride	49		mg Cl/L	P424849	
		Sulfate	14		mg SO4/L	P424852	
	SM 2320 B-2011	Total Alkalinity	61		mg CaCO3/L	P425022	
	SM 2540 C-2015	TDS	208	A	mg/L	P424961	
	SM 2540 D-2015	TSS	2	IA	mg/L	P424890	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P425319	
2381171	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P425410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P424833	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P424855	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P425127	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P424872	
2381175	EPA 8321B	Acesulfame K	0.10	U	ug/L	P424587	
		2,4-D	0.0020	U	ug/L	P424685	
		2,4,5-T	0.0040	U	ug/L	P424685	
		AMPA	1.0	U	ug/L	P424587	MS
		Acetaminophen	0.0080	U	ug/L	P424685	
		Endothall	0.25	U	ug/L	P424587	
		Acetamiprid	0.0020	U	ug/L	P424685	
		Glufosinate	1.0	U	ug/L	P424587	
		Glyphosate	1.0	U	ug/L	P424587	
		Afidopyropen	0.0020	U	ug/L	P424685	
		Sucralose	0.36		ug/L	P424587	
		Bentazon	0.025		ug/L	P424685	
		Benzovindiflupyr	0.0020	U	ug/L	P424685	
		Carbamazepine	8.0E-04	U	ug/L	P424685	
		Clothianidin	0.0020	U	ug/L	P424685	
		Dinotefuran	0.0020	U	ug/L	P424685	
		Diuron	0.0020	U	ug/L	P424685	
		Fenuron	0.032	U	ug/L	P424685	
		Fluridone	8.0E-04	U	ug/L	P424685	
		Imazapyr	0.074		ug/L	P424685	
		Hydrocodone	0.0020	U	ug/L	P424685	
		Ibuprofen	0.080	U	ug/L	P424685	
		Imidacloprid	0.0020	U	ug/L	P424685	
		Linuron	0.0040	U	ug/L	P424685	
		Mandestrobin	0.0020	U	ug/L	P424685	
		MCPP	0.0020	U	ug/L	P424685	
		Naproxen	0.0080	U	ug/L	P424685	
		Primidone	0.0040	U	ug/L	P424685	
		Pyraclostrobin	0.0020	U	ug/L	P424685	
		Silvex	0.0040	U	ug/L	P424685	
		Thiamethoxam	0.0020	U	ug/L	P424685	
		Tolfenpyrad	0.0020	U	ug/L	P424685	
		Triclopyr	0.0040	U	ug/L	P424685	

Field ID: G5NE0610

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Non-Conformance Report

NCR ID: 9704

Event(s)

NE-DIST-2023-01-17-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Customer contacted, email correspondence attached to sample submittal forms.

Authorized by/Date: Kyle Klug 1/23/2023

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424849

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424852

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425206

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424833

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424940

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424855

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424901

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424789

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425127

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

Reference Method: EPA 8321B
Batch ID: P424587

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: EPA 8321B
Batch ID: P424685

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
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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P425022

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P424961

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P424890

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P424891

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425319

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425447

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P424872

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P425051

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: P424849

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424852

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425206

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424940

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: P424855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424901

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: P424789

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P425127

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

Reference Method: EPA 8321B

Batch ID: P424587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	114		P	40 - 150
AMPA	88.8		P	40 - 150
Endothall	129		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	97.6		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P424685

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	120		P	40 - 150
2,4,5-T	94.7		P	40 - 150
Acetaminophen	84.4		P	30 - 150
Acetamiprid	80.5		P	40 - 150
Afidopyropen	51.3		P	30 - 150
Bentazon	66.6		P	30 - 150
Benzovindiflupyr	78.1		P	40 - 150
Carbamazepine	65.2		P	40 - 150
Clothianidin	93.9		P	40 - 150
Dinotefuran	96.8		P	40 - 150
Diuron	47.5		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	70.4		P	40 - 150
Hydrocodone	87.6		P	40 - 150
Ibuprofen	79.2		P	40 - 150
Imazapyr	83.1		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	53.7		P	40 - 150
Mandestrobin	73.2		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	82.4		P	40 - 150
Primidone	86.0		P	40 - 150
Pyraclostrobin	66.7		P	40 - 150
Silvex	85.3		P	40 - 150
Thiamethoxam	82.8		P	40 - 150
Tolfenpyrad	39.4		P	30 - 150
Triclopyr	84.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P425022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.8		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P424961

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

Reference Method: SM 2540 D-2015
Batch ID: P424890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.6		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P424891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.5		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P425447

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P424872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.3		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P425051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424849

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381230	Chloride	101		P	90 - 110
2381305	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381230	Sulfate	100		P	90 - 110
2381305	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380967	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382103	Ammonia-N	98.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381171	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380817	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381152	NO2NO3-N	96.2	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380970	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381263	Total-P	98.3	98.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382290	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P424587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380683	Acesulfame K	101	96.3	P/P	40 - 150
2380683	AMPA	36.8	43.0	F/P	40 - 150
2380683	Endothall	132	138	P/P	40 - 150
2380683	Glufosinate	60.7	67.3	P/P	40 - 150
2380683	Glyphosate	58.8	71.8	P/P	40 - 150
2380683	Sucralose	94.3	92.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P424685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380979	2,4-D	150	119	P/P	40 - 150
2380979	2,4,5-T	116	95.9	P/P	40 - 150
2380979	Acetaminophen	91.8	88.2	P/P	30 - 150
2380979	Acetamiprid	106	102	P/P	40 - 150
2380979	Afidopyrophen	71.8	67.5	P/P	30 - 150
2380979	Bentazon	61.7	68.2	P/P	30 - 150
2380979	Benzovindiflupyr	77.0	77.5	P/P	40 - 150
2380979	Carbamazepine	65.0	79.5	P/P	40 - 150
2380979	Clothianidin	99.5	98.5	P/P	40 - 150
2380979	Dinotefuran	116	104	P/P	40 - 150
2380979	Diuron	46.5	59.8	P/P	40 - 150
2380979	Fenuron	94.1	95.5	P/P	40 - 150
2380979	Fluridone	74.3	78.2	P/P	40 - 150
2380979	Hydrocodone	96.1	92.7	P/P	40 - 150
2380979	Ibuprofen	77.3	85.7	P/P	40 - 150
2380979	Imazapyr	103	88.1	P/P	40 - 150
2380979	Imidacloprid	125	107	P/P	40 - 150
2380979	Linuron	51.8	60.2	P/P	40 - 150
2380979	Mandestrobin	83.2	78.3	P/P	40 - 150
2380979	MCPD	131	112	P/P	40 - 150
2380979	Naproxen	63.7	74.3	P/P	40 - 150
2380979	Primidone	94.6	96.9	P/P	40 - 150
2380979	Pyraclostrobin	62.0	62.3	P/P	40 - 150
2380979	Silvex	86.8	87.2	P/P	40 - 150
2380979	Thiamethoxam	89.7	92.2	P/P	40 - 150
2380979	Tolfenpyrad	36.6	31.5	P/P	30 - 150
2380979	Triclopyr	110	98.8	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P425319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381223	Fluoride	99.2	99.8	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P425447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381168	Fluoride	91.5	88.7	F/F	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P424872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381171	Organic Carbon	104		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P425051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381169	Organic Carbon	91.5	92.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381230	Chloride	0.167	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P424852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381230	Sulfate	0.427	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380967	Ammonia-N	0.616	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382103	Ammonia-N	0.611	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381171	Kjeldahl Nitrogen	0.592	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380817	Kjeldahl Nitrogen	0.725	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381152	NO2NO3-N	0.640	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380970	NO2NO3-N	0.487	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381263	Total-P	0.255	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382290	Total-P	0.0192	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P424587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380683	Acesulfame K	5.11	Spike	P	0 - 30
2380683	AMPA	10.8	Spike	P	0 - 30
2380683	Endothall	4.17	Spike	P	0 - 30
2380683	Glufosinate	10.4	Spike	P	0 - 30
2380683	Glyphosate	15.2	Spike	P	0 - 30
2380683	Sucralose	1.75	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P424685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380979	2,4-D	23.3	Spike	P	0 - 30
2380979	2,4,5-T	18.9	Spike	P	0 - 30
2380979	Acetaminophen	3.94	Spike	P	0 - 30
2380979	Acetamiprid	4.14	Spike	P	0 - 30
2380979	Afidopyropen	6.15	Spike	P	0 - 30
2380979	Bentazon	10.0	Spike	P	0 - 30
2380979	Benzovindiflupyr	0.718	Spike	P	0 - 30
2380979	Carbamazepine	20.2	Spike	P	0 - 30
2380979	Clothianidin	0.979	Spike	P	0 - 30
2380979	Dinotefuran	10.8	Spike	P	0 - 30
2380979	Diuron	25.0	Spike	P	0 - 30
2380979	Fenuron	1.53	Spike	P	0 - 30
2380979	Fluridone	5.09	Spike	P	0 - 30
2380979	Hydrocodone	3.52	Spike	P	0 - 30
2380979	Ibuprofen	10.4	Spike	P	0 - 30
2380979	Imazapyr	14.3	Spike	P	0 - 30
2380979	Imidacloprid	15.2	Spike	P	0 - 30
2380979	Linuron	15.0	Spike	P	0 - 30
2380979	Mandestrobin	6.10	Spike	P	0 - 30
2380979	MCPP	15.5	Spike	P	0 - 30
2380979	Naproxen	15.4	Spike	P	0 - 30
2380979	Primidone	2.41	Spike	P	0 - 30
2380979	Pyraclostrobin	0.484	Spike	P	0 - 30
2380979	Silvex	0.421	Spike	P	0 - 30
2380979	Thiamethoxam	2.79	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P424685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380979	Tolfenpyrad	14.9	Spike	P	0 - 30
2380979	Triclopyr	10.6	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P425022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381223	Total Alkalinity	1.75	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P424961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381170	TDS	8.15	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381223	Fluoride	0.477	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P425447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381168	Fluoride	1.97	Spike	F	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P424872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381171	Organic Carbon	0.324	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P425051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381169	Organic Carbon	0.777	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2381175

Field Sample ID: G5NE0610

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	35.1	P	30 - 160
EPA 8321B	Diuron-d6	31.2	P	30 - 160
EPA 8321B	Endothall-d6	80.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.1	P	30 - 160
EPA 8321B	Primidone-d5	80.9	P	30 - 160
EPA 8321B	Sucralose-d6	86.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116936

Included Lab Sample IDs: 2381170

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

Reference Method: EPA 8321B

Run ID: A116976

Included Lab Sample IDs: 2381175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	89.4	99.9	P/P	60 - 160
Endothall	92.9	94.7	P/P	60 - 160
Glufosinate	91.4	101	P/P	60 - 160
Glyphosate	96.0	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116977

Included Lab Sample IDs: 2381175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.6	92.3	P/P	60 - 160
Sucralose	98.7	104	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117036

Included Lab Sample IDs: 2381171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117037

Included Lab Sample IDs: 2381175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	110	P/P	50 - 150
2,4,5-T	108	109	P/P	50 - 150
Acetaminophen	113	115	P/P	60 - 160
Acetamiprid	114	112	P/P	50 - 150
Afidopyropen	85.4	104	P/P	50 - 150
Bentazon	90.8	89.3	P/P	50 - 160
Benzovindiflupyr	107	98.8	P/P	50 - 150
Carbamazepine	112	117	P/P	60 - 150
Clothianidin	113	109	P/P	60 - 150
Dinotefuran	117	115	P/P	50 - 150
Diuron	104	112	P/P	60 - 160
Fenuron	112	112	P/P	60 - 150
Fluridone	97.8	96.9	P/P	60 - 160
Hydrocodone	115	111	P/P	60 - 150
Ibuprofen	80.6	103	P/P	50 - 160
Imazapyr	101	106	P/P	50 - 150
Imidacloprid	104	103	P/P	60 - 150
Linuron	93.5	99.3	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A117037
Included Lab Sample IDs: 2381175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	97.7	90.6	P/P	50 - 150
MCPD	91.9	103	P/P	50 - 150
Naproxen	89.6	104	P/P	50 - 160
Primidone	102	101	P/P	60 - 150
Pyraclostrobin	96.2	85.1	P/P	60 - 150
Silvex	96.8	114	P/P	50 - 150
Thiamethoxam	114	115	P/P	50 - 150
Tolfenpyrad	96.8	83.8	P/P	60 - 150
Triclopyr	105	102	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A117044
Included Lab Sample IDs: 2381171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117060
Included Lab Sample IDs: 2381169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117063
Included Lab Sample IDs: 2381169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.0	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117076
Included Lab Sample IDs: 2381171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	99.5	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A117107
Included Lab Sample IDs: 2381168, 2381170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.8	95.6	P/P	90 - 110
Total Alkalinity	95.6	94.0	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A117121
Included Lab Sample IDs: 2381169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A117121

Included Lab Sample IDs: 2381169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.7	94.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117139

Included Lab Sample IDs: 2381169

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117180

Included Lab Sample IDs: 2381169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117189

Included Lab Sample IDs: 2381171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117235

Included Lab Sample IDs: 2381170

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117272

Included Lab Sample IDs: 2381171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117285

Included Lab Sample IDs: 2381168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	97.6	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 300.0 Rev. 2.1	Chloride	102	101	99.4		0.167	
	Sulfate	102	100	99.8		0.427	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	103	102			0.616
	Ammonia-N	101	98.0	98.8			0.611
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7	106	106			0.592
	Kjeldahl Nitrogen	105	101	102			0.725
EPA 353.2 Rev. 2.0	NO2NO3-N	104	96.2	97.2			0.640
	NO2NO3-N	100	103	102			0.487
EPA 365.1 Rev. 2.0	Total-P	107	98.3	98.1			0.255
	Total-P	105	108	108			0.0192
EPA 8321B	2,4-D	120	150	119			23.3
	2,4,5-T	94.7	116	95.9			18.9
	Acesulfame K	114	101	96.3			5.11
	Acetaminophen	84.4	91.8	88.2			3.94
	Acetamiprid	80.5	106	102			4.14
	Afidopyropen	51.3	71.8	67.5			6.15
	AMPA	88.8	36.8	43.0			10.8
	Bentazon	66.6	61.7	68.2			10.0
	Benzovindiflupyr	78.1	77.0	77.5			0.718
	Carbamazepine	65.2	65.0	79.5			20.2
	Clothianidin	93.9	99.5	98.5			0.979
	Dinotefuran	96.8	116	104			10.8
	Diuron	47.5	46.5	59.8			25.0
	Endothall	129	132	138			4.17
	Fenuron	101	94.1	95.5			1.53
	Fluridone	70.4	74.3	78.2			5.09
	Glufosinate	107	60.7	67.3			10.4
	Glyphosate	97.6	58.8	71.8			15.2
	Hydrocodone	87.6	96.1	92.7			3.52
	Ibuprofen	79.2	77.3	85.7			10.4
	Imazapyr	83.1	103	88.1			14.3
	Imidacloprid	104	125	107			15.2
	Linuron	53.7	51.8	60.2			15.0
	Mandestrobin	73.2	83.2	78.3			6.10
	MCPP	112	131	112			15.5
	Naproxen	82.4	63.7	74.3			15.4
	Primidone	86.0	94.6	96.9			2.41
	Pyraclostrobin	66.7	62.0	62.3			0.484
	Silvex	85.3	86.8	87.2			0.421
	Sucralose	109	94.3	92.6			1.75
	Thiamethoxam	82.8	89.7	92.2			2.79
	Tolfenpyrad	39.4	36.6	31.5			14.9
	Triclopyr	84.0	110	98.8			10.6
SM 2320 B-2011	Total Alkalinity	94.8				1.75	
SM 2540 C-2015	TDS	99.2				8.15	
SM 2540 D-2015	TSS	95.6					
	TSS	96.5					
SM 4500-F- C-2011	Fluoride	97.1	99.2	99.8			0.477
	Fluoride	96.5	91.5	88.7			1.97
SM 5310 B-2011	Organic Carbon	99.3	104				0.324
	Organic Carbon	99.7	91.5	92.5			0.777

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2381170
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2381170
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2381169, 2381171
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2381169, 2381171
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2381169, 2381171
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2381169, 2381171
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2381175
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2381168, 2381170
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2381170
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2381168, 2381170
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2381168, 2381170
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2381169, 2381171

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 300.0 Rev. 2.1	01/17/2023			01/20/2023 19:54	Anna M. Plaviak	2381170
EPA 350.1 Rev. 2.0	01/17/2023			01/31/2023 13:17	Ping Hua	2381169
	01/17/2023			02/06/2023 10:30	Ping Hua	2381171
EPA 351.2 Rev. 2.0	01/17/2023	01/23/2023 12:30	Simonne.V. Calhoun	01/24/2023 14:47	Samantha L Bates	2381171
	01/17/2023	01/26/2023 08:24	Samantha L Bates	01/27/2023 11:38	Judith K. Clark	2381169
EPA 353.2 Rev. 2.0	01/17/2023			01/23/2023 10:10	Beverly Y. Sanders	2381171
	01/17/2023			01/24/2023 10:57	Beverly Y. Sanders	2381169
EPA 365.1 Rev. 2.0	01/17/2023	01/20/2023 17:10	Adam P Silver	01/24/2023 11:11	James L Waggeberby	2381169
	01/17/2023	01/30/2023 14:03	Adam P Silver	01/31/2023 14:18	James L Waggeberby	2381171
EPA 8321B	01/17/2023	01/17/2023 13:00	Manjita Shrestha	01/17/2023 19:22	Manjita Shrestha	2381175
	01/17/2023	01/17/2023 13:00	Manjita Shrestha	01/18/2023 00:44	Manjita Shrestha	2381175
	01/17/2023	01/17/2023 13:00	Manjita Shrestha	01/18/2023 02:54	Manjita Shrestha	2381175
	01/17/2023	01/19/2023 10:00	June Rhew	01/20/2023 23:56	Juyoung Kim	2381175
SM 2320 B-2011	01/17/2023			01/25/2023 02:27	Dale L. Simmons	2381170
	01/17/2023			01/25/2023 05:44	Dale L. Simmons	2381168
SM 2540 C-2015	01/17/2023			01/18/2023 15:45	Yijie Li	2381170
SM 2540 D-2015	01/17/2023			01/18/2023 15:45	Yijie Li	2381168, 2381170
SM 4500-F- C-2011	01/17/2023			02/02/2023 01:47	Dale L. Simmons	2381170
	01/17/2023			02/07/2023 01:07	Adam P Silver	2381168
SM 5310 B-2011	01/17/2023			01/19/2023 15:17	Khloe J Berg	2381171
	01/17/2023			01/25/2023 21:43	Khloe J Berg	2381169