

Chemical Analysis Report

WQAP-2022-10-20-03

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

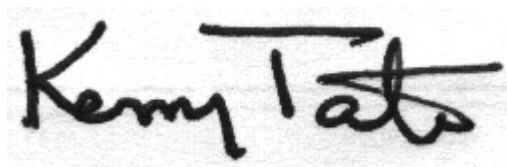
Event Description: **Hurricane Ian Post Storm Monitoring - SE ROC**
Request ID: **RQ-2022-10-17-74**
Customer: **WQAP**
Project ID: **HURR-IAN**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 28-OCT-2022 08:19

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: Metals, 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: S-65 Downstream

Collection Date/Time: 10/19/2022 12:00

Field ID: 59629

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364061	DEP SOP: NU-094-1	Color (true)	210		PCU	P421194	
	EPA 120.1	Specific_Conductance	126		umhos/cm	P421302	
	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P421207	
	EPA 300.0 Rev. 2.1	Chloride	17	A	mg Cl/L	P421258	
		Sulfate	4.9	A	mg SO4/L	P421259	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P421305	
	SM 2540 D-2015	TSS	17		mg/L	P421403	
	SM 4500-F- C-2011	Fluoride	0.076	I	mg F/L	P421310	
2364062	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P421250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P421348	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P421244	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P421236	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P421368	
	EPA 8321B	2,4-D	0.0069	I	ug/L	P421320	
2364068		Acesulfame K	0.10	U	ug/L	P421007	
		2,4,5-T	0.0040	U	ug/L	P421320	
		AMPA	0.10	U	ug/L	P421007	
		Acetaminophen	0.0080	U	ug/L	P421320	
		Acetamiprid	0.0020	U	ug/L	P421320	
		Endothall	0.25	U	ug/L	P421007	
		Glufosinate	0.10	U	ug/L	P421007	
		Glyphosate	0.10	U	ug/L	P421007	
		Afidopyropen	0.0020	U	ug/L	P421320	
		Bentazon	0.011		ug/L	P421320	
		Sucralose	0.42		ug/L	P421007	
		Benzovindiflupyr	0.0020	U	ug/L	P421320	
		Carbamazepine	8.0E-04	U	ug/L	P421320	
		Clothianidin	0.0020	U	ug/L	P421320	
		Dinotefuran	0.0020	U	ug/L	P421320	
		Diuron	0.0020	U	ug/L	P421320	
		Fenuron	0.032	U	ug/L	P421320	
		Fluridone	0.0099		ug/L	P421320	
		Imazapyr	0.085		ug/L	P421320	
		Hydrocodone	0.0020	U	ug/L	P421320	
		Ibuprofen	0.20	U	ug/L	P421320	
		Imidacloprid	0.0060	I	ug/L	P421320	
		Linuron	0.0040	U	ug/L	P421320	
		Mandestrobin	0.0020	U	ug/L	P421320	
		MCP	0.0040	U	ug/L	P421320	
		Naproxen	0.0080	U	ug/L	P421320	
		Primidone	0.0040	U	ug/L	P421320	
		Pyraclostrobin	0.0020	U	ug/L	P421320	
		Silvex	0.0040	U	ug/L	P421320	
		Thiamethoxam	0.0020	U	ug/L	P421320	

Field ID: 59629

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2364068	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P421320	
		Triclopyr	0.0040	U	ug/L	P421320	
2364072	EPA 200.7 Rev. 4.4	Calcium	9.54		mg/L	P421233	
		Magnesium	2.61		mg/L	P421233	
		Potassium	2.6		mg/L	P421233	
		Sodium	10.0		mg/L	P421233	
	SM 2340 B-2011	Hardness	34.6		mg/L	P421233	

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: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P421194

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 120.1
Batch ID: P421302

Component	Result	Code	Units
Specific_Conductance	2.0	U	umhos/cm

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421233

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421258

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421259

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421348

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421244

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P421236

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

Reference Method: EPA 8321B

Batch ID: P421007

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: P421320

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	0.20	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	0.0040	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: P421305

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P421403

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P421368

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P421194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	90 - 110

Reference Method: EPA 120.1
Batch ID: P421302

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.1		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421233

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	80 - 120
Magnesium	105		P	80 - 120
Potassium	104		P	80 - 120
Sodium	96.9		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421348

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P421236

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

Reference Method: EPA 8321B

Batch ID: P421007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	101		P	40 - 150
Endothall	98.4		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	99.8		P	40 - 150
Sucralose	83.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P421320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.3		P	40 - 150
2,4,5-T	69.0		P	40 - 150
Acetaminophen	92.5		P	30 - 150
Acetamiprid	76.4		P	40 - 150
Afidopyropen	60.9		P	30 - 150
Bentazon	80.5		P	30 - 150
Benzovindiflupyr	76.1		P	40 - 150
Carbamazepine	84.6		P	40 - 150
Clothianidin	95.9		P	40 - 150
Dinotefuran	97.9		P	40 - 150
Diuron	76.7		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	86.6		P	40 - 150
Hydrocodone	95.6		P	40 - 150
Ibuprofen	79.8		P	40 - 150
Imazapyr	108		P	40 - 150
Imidacloprid	92.3		P	40 - 150
Linuron	65.3		P	40 - 150
Mandestrobin	80.5		P	40 - 150
MCPP	83.2		P	40 - 150
Naproxen	84.0		P	40 - 150
Primidone	100		P	40 - 150
Pyraclostrobin	75.3		P	40 - 150
Silvex	66.8		P	40 - 150
Thiamethoxam	89.8		P	40 - 150
Tolfenpyrad	47.5		P	30 - 150
Triclopyr	66.9		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P421305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P421403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421368

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P421233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362992	Calcium	101	102	P/P	80 - 120
2362992	Magnesium	104	105	P/P	80 - 120
2362992	Potassium	100	101	P/P	80 - 120
2362992	Sodium	94.6		P	80 - 120
2363965	Calcium	107		P	80 - 120
2363965	Magnesium	111		P	80 - 120
2363965	Potassium	107		P	80 - 120
2363965	Sodium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P421258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364061	Chloride	92.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P421259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364061	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P421250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2362178	Ammonia-N	107	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P421348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363074	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P421244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363396	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P421236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363263	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P421007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363721	Acesulfame K	106	106	P/P	40 - 150
2363721	AMPA	107	117	P/P	40 - 150
2363721	Endothall	98.4	97.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P421007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363721	Glufosinate	108	111	P/P	40 - 150
2363721	Glyphosate	119	125	P/P	40 - 150
2363721	Sucralose	81.7	82.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P421320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364461	2,4-D	81.2	101	P/P	40 - 150
2364461	2,4,5-T	58.7	62.9	P/P	40 - 150
2364461	Acetaminophen	102	100	P/P	30 - 150
2364461	Acetamiprid	66.9	82.8	P/P	40 - 150
2364461	Afidopyropen	48.4	61.6	P/P	30 - 150
2364461	Benzovindiflupyr	79.0	83.1	P/P	40 - 150
2364461	Carbamazepine	80.6	85.0	P/P	40 - 150
2364461	Clothianidin	118	109	P/P	40 - 150
2364461	Dinotefuran	111	113	P/P	40 - 150
2364461	Diuron	65.7	68.3	P/P	40 - 150
2364461	Fenuron	103	102	P/P	40 - 150
2364461	Fluridone	85.2	85.7	P/P	40 - 150
2364461	Hydrocodone	107	104	P/P	40 - 150
2364461	Ibuprofen	79.7	79.3	P/P	40 - 150
2364461	Imazapyr	117	113	P/P	40 - 150
2364461	Imidacloprid	131	132	P/P	40 - 150
2364461	Linuron	61.8	60.7	P/P	40 - 150
2364461	Mandestrobin	74.6	78.7	P/P	40 - 150
2364461	MCPP	73.7	82.9	P/P	40 - 150
2364461	Naproxen	70.5	63.5	P/P	40 - 150
2364461	Primidone	108	109	P/P	40 - 150
2364461	Pyraclostrobin	79.9	80.7	P/P	40 - 150
2364461	Silvex	61.9	68.1	P/P	40 - 150
2364461	Thiamethoxam	119	114	P/P	40 - 150
2364461	Tolfenpyrad	50.1	54.5	P/P	30 - 150
2364461	Triclopyr	58.0	67.4	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363803	Fluoride	96.8	97.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363692	Organic Carbon	99.0	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P421194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364092	Color (true)	12.2	Sample	P	0 - 20

Reference Method: EPA 120.1
Batch ID: P421302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363803	Specific_Conductance	0.942	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363980	Turbidity	3.43	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362992	Calcium	1.13	Spike	P	0 - 20
2362992	Magnesium	1.34	Spike	P	0 - 20
2362992	Potassium	0.267	Spike	P	0 - 20
2362992	Sodium	0.436	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364061	Chloride	0.392	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364061	Sulfate	1.34	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2362178	Ammonia-N	3.81	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363074	Kjeldahl Nitrogen	0.395	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363396	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363263	Total-P	0.641	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P421007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363721	Acesulfame K	0.105	Spike	P	0 - 30
2363721	AMPA	8.75	Spike	P	0 - 30
2363721	Endothall	0.762	Spike	P	0 - 30
2363721	Glufosinate	3.32	Spike	P	0 - 30
2363721	Glyphosate	4.19	Spike	P	0 - 30
2363721	Sucralose	0.737	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P421320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364461	2,4-D	21.4	Spike	P	0 - 30
2364461	2,4,5-T	6.85	Spike	P	0 - 30
2364461	Acetaminophen	1.30	Spike	P	0 - 30
2364461	Acetamiprid	21.3	Spike	P	0 - 30
2364461	Afidopyropen	24.0	Spike	P	0 - 30
2364461	Bentazon	9.50	Spike	P	0 - 30
2364461	Benzovindiflupyr	5.04	Spike	P	0 - 30
2364461	Carbamazepine	5.42	Spike	P	0 - 30
2364461	Clothianidin	8.06	Spike	P	0 - 30
2364461	Dinotefuran	1.44	Spike	P	0 - 30
2364461	Diuron	3.03	Spike	P	0 - 30
2364461	Fenuron	1.36	Spike	P	0 - 30
2364461	Fluridone	0.493	Spike	P	0 - 30
2364461	Hydrocodone	2.66	Spike	P	0 - 30
2364461	Ibuprofen	0.480	Spike	P	0 - 30
2364461	Imazapyr	2.66	Spike	P	0 - 30
2364461	Imidacloprid	0.477	Spike	P	0 - 30
2364461	Linuron	1.76	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P421320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364461	Mandestrobin	5.40	Spike	P	0 - 30
2364461	MCP	11.7	Spike	P	0 - 30
2364461	Naproxen	10.5	Spike	P	0 - 30
2364461	Primidone	1.33	Spike	P	0 - 30
2364461	Pyraclostrobin	0.999	Spike	P	0 - 30
2364461	Silvex	9.48	Spike	P	0 - 30
2364461	Thiamethoxam	4.85	Spike	P	0 - 30
2364461	Tolfenpyrad	8.37	Spike	P	0 - 30
2364461	Triclopyr	15.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P421305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363803	Total Alkalinity	0.742	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P421310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363803	Fluoride	0.490	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P421368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363692	Organic Carbon	0.698	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2364068

Field Sample ID: 59629

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.3	P	30 - 160
EPA 8321B	Diuron-d6	56.5	P	30 - 160
EPA 8321B	Endothall-d6	139	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.5	P	30 - 160
EPA 8321B	Primidone-d5	93.7	P	30 - 160
EPA 8321B	Sucralose-d6	88.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115395

Included Lab Sample IDs: 2364061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.6	96.9	P/P	90 - 110
Sulfate	97.8	98.2	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A115433

Included Lab Sample IDs: 2364061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	98.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115436

Included Lab Sample IDs: 2364061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A115447

Included Lab Sample IDs: 2364068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.1	96.3	P/P	60 - 160
Sucralose	87.0	86.0	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115453

Included Lab Sample IDs: 2364062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	94.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115454

Included Lab Sample IDs: 2364062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A115462

Included Lab Sample IDs: 2364068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	101	P/P	60 - 160
Endothall	99.2	95.2	P/P	60 - 160
Glufosinate	95.3	93.7	P/P	60 - 160
Glyphosate	99.6	112	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115463

Included Lab Sample IDs: 2364062

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

Reference Method: EPA 120.1

Run ID: A115475

Included Lab Sample IDs: 2364061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Specific_Conductance	101	102	P/P	85 - 115

Reference Method: SM 2320 B-2011

Run ID: A115475

Included Lab Sample IDs: 2364061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A115475

Included Lab Sample IDs: 2364061

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A115496

Included Lab Sample IDs: 2364072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	93.2	96.2	P/P	90 - 110
Magnesium	93.9	96.6	P/P	90 - 110
Potassium	93.6	96.9	P/P	90 - 110
Sodium	92.7	95.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A115497

Included Lab Sample IDs: 2364062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A115534

Included Lab Sample IDs: 2364068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	97.2	P/P	50 - 150
2,4,5-T	106	102	P/P	50 - 150
Acetaminophen	109	106	P/P	60 - 160
Acetamiprid	94.1	110	P/P	50 - 150
Afidopyropen	99.6	104	P/P	50 - 150
Bentazon	98.2	99.8	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A115534
Included Lab Sample IDs: 2364068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	108	107	P/P	50 - 150
Carbamazepine	114	112	P/P	60 - 150
Clothianidin	101	109	P/P	60 - 150
Dinotefuran	117	115	P/P	50 - 150
Diuron	110	103	P/P	60 - 160
Fenuron	110	110	P/P	60 - 150
Fluridone	103	102	P/P	60 - 160
Hydrocodone	109	116	P/P	60 - 150
Ibuprofen	117	102	P/P	50 - 160
Imazapyr	116	124	P/P	50 - 150
Imidacloprid	94.3	99.3	P/P	60 - 150
Linuron	96.0	96.7	P/P	60 - 150
Mandestrobin	103	103	P/P	50 - 150
MCPP	102	105	P/P	50 - 150
Naproxen	81.1	120	P/P	50 - 160
Primidone	111	109	P/P	60 - 150
Pyraclostrobin	102	104	P/P	60 - 150
Silvex	99.9	101	P/P	50 - 150
Thiamethoxam	104	97.6	P/P	50 - 150
Tolfenpyrad	104	105	P/P	60 - 150
Triclopyr	106	108	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115539
Included Lab Sample IDs: 2364062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	104	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	
DEP SOP: NU-094-1	Color (true)	99.7					12.2	
EPA 120.1	Specific_Conductance	100					0.942	
EPA 180.1 Rev. 2.0	Turbidity	99.1					3.43	
EPA 200.7 Rev. 4.4	Calcium	104	101	102	107			1.13
	Magnesium	105	104	105	111			1.34
	Potassium	104	100	101	107			0.267
	Sodium	96.9	94.6	107				0.436
EPA 300.0 Rev. 2.1	Chloride	93.4	92.9				0.392	
	Sulfate	92.2	97.8				1.34	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	107	101				3.81
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102	101				0.395
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	98.0	98.0				0.0
EPA 365.1 Rev. 2.0	Total-P	107	107	108				0.641
EPA 8321B	2,4-D	83.3	81.2	101				21.4
	2,4,5-T	69.0	58.7	62.9				6.85
	Acesulfame K	101	106	106				0.105
	Acetaminophen	92.5	102	100				1.30
	Acetamiprid	76.4	66.9	82.8				21.3
	Afidopyropen	60.9	48.4	61.6				24.0
	AMPA	101	107	117				8.75
	Bentazon	80.5						9.50
	Benzovindiflupyr	76.1	79.0	83.1				5.04
	Carbamazepine	84.6	80.6	85.0				5.42
	Clothianidin	95.9	118	109				8.06
	Dinotefuran	97.9	111	113				1.44
	Diuron	76.7	65.7	68.3				3.03
	Endothall	98.4	98.4	97.7				0.762
	Fenuron	106	103	102				1.36
	Fluridone	86.6	85.2	85.7				0.493
	Glufosinate	106	108	111				3.32
	Glyphosate	99.8	119	125				4.19
	Hydrocodone	95.6	107	104				2.66
	Ibuprofen	79.8	79.3	79.7				0.480
	Imazapyr	108	117	113				2.66
	Imidacloprid	92.3	131	132				0.477
	Linuron	65.3	61.8	60.7				1.76
	Mandestrobin	80.5	74.6	78.7				5.40
	MCPP	83.2	73.7	82.9				11.7
	Naproxen	84.0	70.5	63.5				10.5
	Primidone	100	108	109				1.33
	Pyraclostrobin	75.3	79.9	80.7				0.999
	Silvex	66.8	61.9	68.1				9.48
	Sucralose	83.4	81.7	82.3				0.737
	Thiamethoxam	89.8	119	114				4.85
	Tolfenpyrad	47.5	50.1	54.5				8.37
	Triclopyr	66.9	58.0	67.4				15.0
SM 2320 B-2011	Total Alkalinity	103					0.742	
SM 2540 D-2015	TSS	93.1						
SM 4500-F- C-2011	Fluoride	99.2	96.8	97.4				0.490
SM 5310 B-2011	Organic Carbon	100	99.0	99.7				0.698

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2364061
EPA 120.1	Specific Conductivity in aqueous matrices (umhos/cm at 25 deg C).	2364061
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2364061
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2364072
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2364061
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2364061
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2364062
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2364062
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2364062
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2364062
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2364068
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2364061
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2364072
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2364061
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2364061
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2364062

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	10/20/2022			10/20/2022 15:02	Anna M. Plaviak	2364061
EPA 120.1	10/20/2022			10/22/2022 10:53	Dale L. Simmons	2364061
EPA 180.1 Rev. 2.0	10/20/2022			10/20/2022 14:27	Chandler E Cox	2364061
EPA 200.7 Rev. 4.4	10/20/2022	10/21/2022 11:20	George D Taylor	10/25/2022 02:05	McKinley C Carter	2364072
EPA 300.0 Rev. 2.1	10/20/2022			10/21/2022 11:46	Anna M. Plaviak	2364061
EPA 350.1 Rev. 2.0	10/20/2022			10/21/2022 10:16	Judith K. Clark	2364062
EPA 351.2 Rev. 2.0	10/20/2022	10/25/2022 12:01	Alexandra J Mattheus	10/26/2022 12:04	Samantha L Bates	2364062
EPA 353.2 Rev. 2.0	10/20/2022			10/21/2022 09:45	Beverly Y. Sanders	2364062
EPA 365.1 Rev. 2.0	10/20/2022	10/21/2022 14:01	Adam P Silver	10/23/2022 10:21	James L Waggerby	2364062
EPA 8321B	10/20/2022	10/20/2022 12:30	Umesh Chiluwal	10/20/2022 13:13	Umesh Chiluwal	2364068
	10/20/2022	10/20/2022 12:30	Umesh Chiluwal	10/21/2022 19:32	Umesh Chiluwal	2364068
	10/20/2022	10/25/2022 10:30	June Rhew	10/25/2022 22:53	Juyoung Kim	2364068
SM 2320 B-2011	10/20/2022			10/22/2022 10:53	Dale L. Simmons	2364061
SM 2340 B-2011	10/20/2022			10/25/2022 02:05	McKinley C Carter	2364072
SM 2540 D-2015	10/20/2022			10/21/2022 17:06	Yijie Li	2364061
SM 4500-F- C-2011	10/20/2022			10/22/2022 10:53	Dale L. Simmons	2364061
SM 5310 B-2011	10/20/2022			10/25/2022 09:36	Judith K. Clark	2364062