

Chemical Analysis Report

WQAP-2022-10-27-03

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

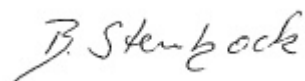
Event Description: **Hurricane Ian Post Storm Monitoring - CEN ROC**
Request ID: **RQ-2022-10-24-44**
Customer: **WQAP**
Project ID: **HURR-IAN**

Send Reports to:
FL Dept. of Environmental Protection
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Orlando, FL 32803
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-NOV-2022 13:37



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: ST JOHNS RIVER AT HWY 40 NEAR ASTOR

Collection Date/Time: 10/26/2022 12:45

Field ID: 3515

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365716	DEP SOP: NU-094-1	Color (true)	270		PCU	P421560	
	EPA 120.1	Specific_Conductance	311		umhos/cm	P421667	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P421566	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P421654	
		Sulfate	12		mg SO4/L	P421754	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P421670	
	SM 2540 D-2015	TSS	4	I	mg/L	P421784	
2365717	SM 4500-F- C-2011	Fluoride	0.062	I	mg F/L	P421673	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P421681	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P421756	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P421604	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P421603	
2365721	SM 5310 B-2011	Organic Carbon	22		mg C/L	P421647	
	EPA 8321B	2,4-D	0.0070	I	ug/L	P421666	
		Acesulfame K	0.10	U	ug/L	P421533	
		2,4,5-T	0.0040	U	ug/L	P421666	
		AMPA	0.10	U	ug/L	P421533	
		Acetaminophen	0.0080	U	ug/L	P421666	
		Acetamiprid	0.0020	U	ug/L	P421666	
		Endothall	0.25	U	ug/L	P421533	MS
		Glufosinate	0.10	U	ug/L	P421533	
		Glyphosate	0.10	U	ug/L	P421533	
		Afidopyropen	0.0020	U	ug/L	P421666	
		Bentazon	0.011		ug/L	P421666	
		Sucralose	0.44		ug/L	P421533	
		Benzovindiflupyr	0.0020	U	ug/L	P421666	
		Carbamazepine	8.0E-04	U	ug/L	P421666	
		Clothianidin	0.0026	I	ug/L	P421666	
		Dinotefuran	0.0020	U	ug/L	P421666	
		Diuron	0.0020	U	ug/L	P421666	
		Fenuron	0.032	U	ug/L	P421666	
		Fluridone	0.0042		ug/L	P421666	
		Imazapyr	0.041		ug/L	P421666	
		Hydrocodone	0.0020	U	ug/L	P421666	
		Ibuprofen	0.20	U	ug/L	P421666	
		Imidacloprid	0.0061	I	ug/L	P421666	
		Linuron	0.0040	U	ug/L	P421666	
		Mandestrobin	0.0020	U	ug/L	P421666	
		MCPP	0.0040	U	ug/L	P421666	
		Naproxen	0.0080	U	ug/L	P421666	
		Primidone	0.0040	U	ug/L	P421666	
		Pyraclostrobin	0.0020	U	ug/L	P421666	
		Silvex	0.0040	U	ug/L	P421666	
		Thiamethoxam	0.0020	U	ug/L	P421666	

Field ID: 3515

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2365721	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P421666	
		Triclopyr	0.0040	U	ug/L	P421666	
2365722	EPA 200.7 Rev. 4.4	Calcium	16.4		mg/L	P421668	
		Magnesium	5.36		mg/L	P421668	
		Potassium	2.8		mg/L	P421668	
		Sodium	37.6		mg/L	P421668	
		Hardness	63.1		mg/L	P421668	
	SM 2340 B-2011						

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: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P421560

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 120.1
Batch ID: P421667

Component	Result	Code	Units
Specific_Conductance	2.0	U	umhos/cm

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421566

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421668

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: P421654

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421754

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421681

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421604

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: P421603

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Reference Method: EPA 8321B

Batch ID: P421533

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: P421666

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: P421670

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: P421784

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421673

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P421647

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: P421560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	91.7		P	90 - 110

Reference Method: EPA 120.1
Batch ID: P421667

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: P421566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.4		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.8		P	85 - 115
Magnesium	99.6		P	85 - 115
Potassium	108		P	85 - 115
Sodium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421654

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421754

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421756

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421604

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P421603

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

Reference Method: EPA 8321B

Batch ID: P421533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	91.8		P	40 - 150
AMPA	104		P	40 - 150
Endothall	96.9		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	114		P	40 - 150
Sucralose	91.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P421666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.0		P	40 - 150
2,4,5-T	74.0		P	40 - 150
Acetaminophen	92.8		P	30 - 150
Acetamiprid	89.9		P	40 - 150
Afidopyropen	70.3		P	30 - 150
Bentazon	106		P	30 - 150
Benzovindiflupyr	92.8		P	40 - 150
Carbamazepine	94.4		P	40 - 150
Clothianidin	101		P	40 - 150
Dinotefuran	106		P	40 - 150
Diuron	84.1		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	100		P	40 - 150
Hydrocodone	98.5		P	40 - 150
Ibuprofen	89.5		P	40 - 150
Imazapyr	88.6		P	40 - 150
Imidacloprid	97.4		P	40 - 150
Linuron	91.5		P	40 - 150
Mandestrobin	87.5		P	40 - 150
MCPP	102		P	40 - 150
Naproxen	73.3		P	40 - 150
Primidone	99.1		P	40 - 150
Pyraclostrobin	78.7		P	40 - 150
Silvex	75.4		P	40 - 150
Thiamethoxam	93.8		P	40 - 150
Tolfenpyrad	50.6		P	30 - 150
Triclopyr	78.7		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P421670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P421784

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

Reference Method: SM 4500-F- C-2011
Batch ID: P421673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P421668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365710	Calcium	108		P	80 - 120
2365710	Magnesium	110		P	80 - 120
2365710	Potassium	109		P	80 - 120
2365710	Sodium	113		P	80 - 120
2366127	Calcium	95.2		P	80 - 120
2366127	Magnesium	96.1		P	80 - 120
2366127	Potassium	107	107	P/P	80 - 120
2366127	Sodium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P421654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363953	Chloride	97.5		P	90 - 110
2364013	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P421754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365667	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P421681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365669	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P421756

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364650	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P421604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364315	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P421533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365683	Acesulfame K	81.3	79.6	P/P	40 - 150
2365683	AMPA	100	103	P/P	40 - 150
2365683	Endothall	159	162	F/F	40 - 150
2365683	Glufosinate	102	100	P/P	40 - 150
2365683	Glyphosate	112	119	P/P	40 - 150
2365683	Sucralose	102	101	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P421666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2365604	2,4-D	113	118	P/P	40 - 150
2365604	2,4,5-T	91.0	86.3	P/P	40 - 150
2365604	Acetaminophen	106	112	P/P	30 - 150
2365604	Acetamiprid	109	110	P/P	40 - 150
2365604	Afidopyropen	92.3	89.9	P/P	30 - 150
2365604	Bentazon	125	116	P/P	30 - 150
2365604	Benzovindiflupyr	97.5	99.7	P/P	40 - 150
2365604	Carbamazepine	105	95.7	P/P	40 - 150
2365604	Clothianidin	114	112	P/P	40 - 150
2365604	Dinotefuran	132	137	P/P	40 - 150
2365604	Diuron	86.0	82.0	P/P	40 - 150
2365604	Fenuron	106	109	P/P	40 - 150
2365604	Fluridone	117	113	P/P	40 - 150
2365604	Hydrocodone	113	118	P/P	40 - 150
2365604	Ibuprofen	85.8	88.7	P/P	40 - 150
2365604	Imazapyr	115	107	P/P	40 - 150
2365604	Imidacloprid	125	122	P/P	40 - 150
2365604	Linuron	99.2	89.7	P/P	40 - 150
2365604	Mandestrobin	96.7	91.6	P/P	40 - 150
2365604	MCPP	117	113	P/P	40 - 150
2365604	Naproxen	75.0	79.1	P/P	40 - 150
2365604	Primidone	113	108	P/P	40 - 150
2365604	Pyraclostrobin	93.3	92.6	P/P	40 - 150
2365604	Silvex	91.0	85.2	P/P	40 - 150
2365604	Thiamethoxam	120	117	P/P	40 - 150
2365604	Tolfenpyrad	50.9	51.1	P/P	30 - 150
2365604	Triclopyr	91.3	83.9	P/P	40 - 150

Reference Method: SM 5310 B-2011

Batch ID: P421647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364879	Organic Carbon	101	98.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P421560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365886	Color (true)	1.21	Sample	P	0 - 20

Reference Method: EPA 120.1
Batch ID: P421667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365524	Specific_Conductance	0.775	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365493	Turbidity	5.83	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P421668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2366127	Calcium	0.0432	Spike	P	0 - 20
2366127	Magnesium	0.619	Spike	P	0 - 20
2366127	Potassium	0.234	Spike	P	0 - 20
2366127	Sodium	0.337	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363953	Chloride	0.629	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P421754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365667	Sulfate	4.08	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365669	Ammonia-N	0.117	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P421756

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364650	Kjeldahl Nitrogen	0.213	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P421604

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364315	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P421603

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365672	Total-P	0.993	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P421533

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365683	Acesulfame K	2.12	Spike	P	0 - 30
2365683	AMPA	2.86	Spike	P	0 - 30
2365683	Endothall	1.92	Spike	P	0 - 30
2365683	Glufosinate	1.70	Spike	P	0 - 30
2365683	Glyphosate	6.51	Spike	P	0 - 30
2365683	Sucralose	0.481	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P421666

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365604	2,4-D	4.08	Spike	P	0 - 30
2365604	2,4,5-T	5.33	Spike	P	0 - 30
2365604	Acetaminophen	5.73	Spike	P	0 - 30
2365604	Acetamiprid	1.05	Spike	P	0 - 30
2365604	Afidopyropen	2.57	Spike	P	0 - 30
2365604	Bentazon	7.06	Spike	P	0 - 30
2365604	Benzovindiflupyr	2.29	Spike	P	0 - 30
2365604	Carbamazepine	9.38	Spike	P	0 - 30
2365604	Clothianidin	2.04	Spike	P	0 - 30
2365604	Dinotefuran	3.94	Spike	P	0 - 30
2365604	Diuron	4.70	Spike	P	0 - 30
2365604	Fenuron	2.56	Spike	P	0 - 30
2365604	Fluridone	3.54	Spike	P	0 - 30
2365604	Hydrocodone	3.68	Spike	P	0 - 30
2365604	Ibuprofen	3.35	Spike	P	0 - 30
2365604	Imazapyr	6.24	Spike	P	0 - 30
2365604	Imidacloprid	2.14	Spike	P	0 - 30
2365604	Linuron	9.96	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P421666

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365604	Mandestrobin	5.49	Spike	P	0 - 30
2365604	MCP	3.73	Spike	P	0 - 30
2365604	Naproxen	5.38	Spike	P	0 - 30
2365604	Primidone	4.72	Spike	P	0 - 30
2365604	Pyraclostrobin	0.682	Spike	P	0 - 30
2365604	Silvex	6.68	Spike	P	0 - 30
2365604	Thiamethoxam	2.35	Spike	P	0 - 30
2365604	Tolfenpyrad	0.521	Spike	P	0 - 30
2365604	Triclopyr	8.50	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P421670

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365524	Total Alkalinity	0.150	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011

Batch ID: P421673

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2365524	Fluoride	0.490	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P421647

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364879	Organic Carbon	1.66	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2365721

Field Sample ID: 3515

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.9	P	30 - 160
EPA 8321B	Diuron-d6	58.6	P	30 - 160
EPA 8321B	Endothall-d6	82.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	114	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.9	P	30 - 160
EPA 8321B	Primidone-d5	116	P	30 - 160
EPA 8321B	Sucralose-d6	99.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A115529
Included Lab Sample IDs: 2365721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.0	103	P/P	60 - 160
Endothall	69.0	83.4	P/P	60 - 160
Glufosinate	65.2	81.7	P/P	60 - 160
Glyphosate	97.2	102	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A115558
Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.1	98.4	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A115569
Included Lab Sample IDs: 2365721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.2	94.2	P/P	60 - 160
Sucralose	94.5	89.3	P/P	60 - 160

Reference Method: DEP SOP: NU-094-1
Run ID: A115576
Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	92.8	92.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A115579
Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115597
Included Lab Sample IDs: 2365717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A115623
Included Lab Sample IDs: 2365717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 120.1
Run ID: A115628
Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Specific_Conductance	100	102	P/P	85 - 115

Reference Method: SM 2320 B-2011
Run ID: A115628
Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	94.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115628
Included Lab Sample IDs: 2365716

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115635
Included Lab Sample IDs: 2365717

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115637
Included Lab Sample IDs: 2365717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115651
Included Lab Sample IDs: 2365717

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A115662
Included Lab Sample IDs: 2365722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.6	97.0	P/P	90 - 110
Magnesium	98.1	100	P/P	90 - 110
Potassium	101	102	P/P	90 - 110
Sodium	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115675

Included Lab Sample IDs: 2365716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	100	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A115677

Included Lab Sample IDs: 2365721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.0	98.0	P/P	50 - 150
2,4,5-T	123	107	P/P	50 - 150
Acetaminophen	107	102	P/P	60 - 160
Acetamiprid	111	111	P/P	50 - 150
Afidopyropen	113	110	P/P	50 - 150
Bentazon	121	118	P/P	50 - 160
Benzovindiflupyr	124	119	P/P	50 - 150
Carbamazepine	117	117	P/P	60 - 150
Clothianidin	125	114	P/P	60 - 150
Dinotefuran	125	121	P/P	50 - 150
Diuron	111	107	P/P	60 - 160
Fenuron	115	106	P/P	60 - 150
Fluridone	122	121	P/P	60 - 160
Hydrocodone	114	120	P/P	60 - 150
Ibuprofen	101	88.7	P/P	50 - 160
Imazapyr	110	110	P/P	50 - 150
Imidacloprid	98.3	103	P/P	60 - 150
Linuron	120	117	P/P	60 - 150
Mandestrobin	110	111	P/P	50 - 150
MCPP	115	110	P/P	50 - 150
Naproxen	102	123	P/P	50 - 160
Primidone	123	116	P/P	60 - 150
Pyraclostrobin	114	117	P/P	60 - 150
Silvex	94.5	105	P/P	50 - 150
Thiamethoxam	121	117	P/P	50 - 150
Tolfenpyrad	122	119	P/P	60 - 150
Triclopyr	105	105	P/P	50 - 150

* 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
DEP SOP: NU-094-1	Color (true)	91.7				1.21	
EPA 120.1	Specific_Conductance	100				0.775	
EPA 180.1 Rev. 2.0	Turbidity	99.4				5.83	
EPA 200.7 Rev. 4.4	Calcium	99.8	108	95.2			0.0432
	Magnesium	99.6	110	96.1			0.619
	Potassium	108	109	107	107		0.234
	Sodium	103	113	106			0.337
EPA 300.0 Rev. 2.1	Chloride	102	97.5	98.3		0.629	
	Sulfate	101	101			4.08	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	101	101			0.117
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	101			0.213
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	103			0.487
EPA 365.1 Rev. 2.0	Total-P	105					0.993
EPA 8321B	2,4-D	90.0	113	118			4.08
	2,4,5-T	74.0	91.0	86.3			5.33
	Acesulfame K	91.8	81.3	79.6			2.12
	Acetaminophen	92.8	106	112			5.73
	Acetamiprid	89.9	109	110			1.05
	Afidopyropen	70.3	92.3	89.9			2.57
	AMPA	104	100	103			2.86
	Bentazon	106	125	116			7.06
	Benzovindiflupyr	92.8	97.5	99.7			2.29
	Carbamazepine	94.4	105	95.7			9.38
	Clothianidin	101	114	112			2.04
	Dinotefuran	106	132	137			3.94
	Diuron	84.1	86.0	82.0			4.70
	Endothall	96.9	159	162			1.92
	Fenuron	104	106	109			2.56
	Fluridone	100	117	113			3.54
	Glufosinate	105	102	100			1.70
	Glyphosate	114	112	119			6.51
	Hydrocodone	98.5	113	118			3.68
	Ibuprofen	89.5	85.8	88.7			3.35
	Imazapyr	88.6	115	107			6.24
	Imidacloprid	97.4	125	122			2.14
	Linuron	91.5	99.2	89.7			9.96
	Mandestrobin	87.5	96.7	91.6			5.49
	MCPP	102	117	113			3.73
	Naproxen	73.3	75.0	79.1			5.38
	Primidone	99.1	113	108			4.72
	Pyraclostrobin	78.7	93.3	92.6			0.682
	Silvex	75.4	91.0	85.2			6.68
	Sucralose	91.6	102	101			0.481
	Thiamethoxam	93.8	120	117			2.35
	Tolfenpyrad	50.6	50.9	51.1			0.521
	Triclopyr	78.7	91.3	83.9			8.50
SM 2320 B-2011	Total Alkalinity	99.1				0.150	
SM 2540 D-2015	TSS	96.5					
SM 4500-F- C-2011	Fluoride	97.0					0.490
SM 5310 B-2011	Organic Carbon	97.2	101	98.3			1.66

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)	2365716
EPA 120.1	Specific Conductivity in aqueous matrices (umhos/cm at 25 deg C).	2365716
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2365716
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2365722
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2365716
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2365716
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2365717
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2365717
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2365717
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2365717
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2365721
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2365716
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2365722
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2365716
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2365716
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2365717

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	10/27/2022			10/27/2022 15:26	Chandler E Cox	2365716
EPA 120.1	10/27/2022			10/28/2022 19:35	Dale L. Simmons	2365716
EPA 180.1 Rev. 2.0	10/27/2022			10/27/2022 14:05	Anna M. Plaviak	2365716
EPA 200.7 Rev. 4.4	10/27/2022	10/31/2022 12:20	George D Taylor	11/01/2022 14:54	Betina Topolski	2365722
EPA 300.0 Rev. 2.1	10/27/2022			10/29/2022 07:31	Anna M. Plaviak	2365716
	10/27/2022			11/01/2022 18:22	Anna M. Plaviak	2365716
EPA 350.1 Rev. 2.0	10/27/2022			10/31/2022 12:11	Ping Hua	2365717
EPA 351.2 Rev. 2.0	10/27/2022	10/28/2022 11:30	Simonne.V. Calhoun	11/01/2022 11:06	Samantha L Bates	2365717
EPA 353.2 Rev. 2.0	10/27/2022			10/28/2022 09:45	Beverly Y. Sanders	2365717
EPA 365.1 Rev. 2.0	10/27/2022	10/28/2022 12:34	Adam P Silver	10/31/2022 11:41	James L Waggeberby	2365717
EPA 8321B	10/27/2022	10/28/2022 13:00	Umesh Chiluwal	10/28/2022 17:16	Umesh Chiluwal	2365721
	10/27/2022	10/28/2022 13:00	Umesh Chiluwal	10/29/2022 05:51	Umesh Chiluwal	2365721
	10/27/2022	11/01/2022 09:30	June Rhew	11/01/2022 20:10	Juyoung Kim	2365721
SM 2320 B-2011	10/27/2022			10/28/2022 19:35	Dale L. Simmons	2365716
SM 2340 B-2011	10/27/2022			11/01/2022 14:54	Betina Topolski	2365722
SM 2540 D-2015	10/27/2022			10/28/2022 15:58	Yijie Li	2365716
SM 4500-F- C-2011	10/27/2022			10/28/2022 19:35	Dale L. Simmons	2365716
SM 5310 B-2011	10/27/2022			10/29/2022 02:05	Khloe J Berg	2365717