

Chemical Analysis Report

SW-DIST-2022-07-07-01

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

Event Description: **2022 Run 11**
Request ID: **RQ-2022-07-04-16**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 26-JUL-2022 13:53

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

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: Fishhawk Creek @ HA site

Collection Date/Time: 07/06/2022 09:40

Field ID: G2SW0144

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339490	EPA 8321B	2,4-D	0.0020	U	ug/L	P416352	
		Acesulfame K	0.10	U	ug/L	P416535	
		2,4,5-T	0.0040	U	ug/L	P416352	
		AMPA	1.2		ug/L	P416535	
		Acetaminophen	0.0080	U	ug/L	P416352	
		Acetamiprid	0.0020	U	ug/L	P416352	
		Endothall	0.25	U	ug/L	P416535	
		Glufosinate	0.10	U	ug/L	P416535	
		Glyphosate	0.69		ug/L	P416535	
		Afidopyropen	0.0020	U	ug/L	P416352	
		Bentazon	0.0062		ug/L	P416352	
		Sucralose	0.17		ug/L	P416535	
		Benzovindiflupyr	0.0020	U	ug/L	P416352	
		Carbamazepine	8.0E-04	U	ug/L	P416352	
		Clothianidin	0.26		ug/L	P416352	
		Dinotefuran	0.0020	U	ug/L	P416352	
		Diuron	0.0020	U	ug/L	P416352	
		Fenuron	0.032	U	ug/L	P416352	
		Fluridone	8.0E-04	U	ug/L	P416352	
		Imazapyr	0.012	I	ug/L	P416352	
		Hydrocodone	0.0020	U	ug/L	P416352	
		Ibuprofen	0.080	U	ug/L	P416352	
		Imidacloprid	3.5		ug/L	P416352	MS
		Linuron	0.0040	U	ug/L	P416352	
		Mandestrobin	0.0020	U	ug/L	P416352	
		MCPP	0.0040	U	ug/L	P416352	
		Naproxen	0.0080	U	ug/L	P416352	
		Primidone	0.0040	U	ug/L	P416352	
		Pyraclostrobin	0.0026	I	ug/L	P416352	
		Silvex	0.0040	U	ug/L	P416352	
		Thiamethoxam	0.019		ug/L	P416352	
		Tolfenpyrad	0.0020	U	ug/L	P416352	
		Triclopyr	0.0040	U	ug/L	P416352	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Sloman Branch @ Nichols Rd

Collection Date/Time: 07/06/2022 09:00

Field ID: G2SW0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339471	DEP SOP: NU-094-1	Color (true)	59		PCU	P416280	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P416289	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P416730	
		Sulfate	30		mg SO4/L	P416733	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P416387	
	SM 2540 C-2011	TDS	161		mg/L	P416545	
	SM 2540 D-2011	TSS	2	U	mg/L	P416548	
	SM 4500-F- C-2011	Fluoride	0.43		mg F/L	P416404	
2339472	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P416420	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P416577	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P416567	
	EPA 365.1 Rev. 2.0	Total-P	0.62		mg P/L	P416392	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P416394	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Hurrah Creek @ Alifia River SP

Collection Date/Time: 07/06/2022 10:00

Field ID: G2SW0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339491	EPA 8321B	2,4-D	0.0020	U	ug/L	P416352	
		Acesulfame K	0.10	U	ug/L	P416535	
		2,4,5-T	0.0040	U	ug/L	P416352	
		AMPA	12		ug/L	P416535	
		Acetaminophen	0.0080	U	ug/L	P416352	
		Acetamiprid	0.0020	U	ug/L	P416352	
		Endothall	0.25	U	ug/L	P416535	
		Glufosinate	0.10	U	ug/L	P416535	
		Glyphosate	3.3		ug/L	P416535	
		Afidopyropen	0.0020	U	ug/L	P416352	
		Bentazon	0.0024	I	ug/L	P416352	
		Sucralose	0.054		ug/L	P416535	
		Benzovindiflupyr	0.0020	U	ug/L	P416352	
		Carbamazepine	8.0E-04	U	ug/L	P416352	
		Clothianidin	0.031		ug/L	P416352	
		Dinotefuran	0.0020	U	ug/L	P416352	
		Diuron	0.0020	U	ug/L	P416352	
		Fenuron	0.032	U	ug/L	P416352	
		Fluridone	0.0011	I	ug/L	P416352	
		Imazapyr	0.023		ug/L	P416352	
		Hydrocodone	0.0020	U	ug/L	P416352	
		Ibuprofen	0.080	U	ug/L	P416352	
		Imidacloprid	0.048		ug/L	P416352	MS
		Linuron	0.0040	U	ug/L	P416352	
		Mandestrobin	0.0020	U	ug/L	P416352	
		MCPP	0.0040	U	ug/L	P416352	
		Naproxen	0.0080	U	ug/L	P416352	
		Primidone	0.0040	U	ug/L	P416352	
		Pyraclostrobin	0.0020	U	ug/L	P416352	
		Silvex	0.0040	U	ug/L	P416352	
		Thiamethoxam	0.017		ug/L	P416352	
		Tolfenpyrad	0.0020	U	ug/L	P416352	
		Triclopyr	0.0040	U	ug/L	P416352	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Carlton Branch @ SR674

Collection Date/Time: 07/06/2022 10:40

Field ID: G2SW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339492	EPA 8321B	2,4-D	0.0020	U	ug/L	P416352	
		Acesulfame K	0.10	U	ug/L	P416535	
		2,4,5-T	0.0040	U	ug/L	P416352	
		AMPA	0.19	I	ug/L	P416535	
		Acetaminophen	0.0080	U	ug/L	P416352	
		Acetamiprid	0.0020	U	ug/L	P416352	
		Endothall	0.25	U	ug/L	P416535	
		Glufosinate	0.10	U	ug/L	P416535	
		Glyphosate	0.10	U	ug/L	P416535	
		Afidopyropen	0.0020	U	ug/L	P416352	
		Bentazon	8.0E-04	U	ug/L	P416352	
		Sucralose	0.12		ug/L	P416535	
		Benzovindiflupyr	0.0020	U	ug/L	P416352	
		Carbamazepine	8.0E-04	U	ug/L	P416352	
		Clothianidin	0.050		ug/L	P416352	
		Dinotefuran	0.37		ug/L	P416352	
		Diuron	0.0020	U	ug/L	P416352	
		Fenuron	0.032	U	ug/L	P416352	
		Fluridone	8.0E-04	U	ug/L	P416352	
		Imazapyr	0.035		ug/L	P416352	
		Hydrocodone	0.0020	U	ug/L	P416352	
		Ibuprofen	0.080	U	ug/L	P416352	
		Imidacloprid	0.050	J	ug/L	P416352	MS
		Linuron	0.0040	U	ug/L	P416352	
		Mandestrobin	0.0020	U	ug/L	P416352	
		MCPP	0.0040	U	ug/L	P416352	
		Naproxen	0.0080	U	ug/L	P416352	
		Primidone	0.0040	U	ug/L	P416352	
		Pyraclostrobin	0.0020	U	ug/L	P416352	
		Silvex	0.0040	U	ug/L	P416352	
		Thiamethoxam	0.26		ug/L	P416352	
		Tolfenpyrad	0.0020	U	ug/L	P416352	
		Triclopyr	0.0040	U	ug/L	P416352	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P416280

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416289

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416730

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416733

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416420

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416567

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416392

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

Reference Method: EPA 8321B
Batch ID: P416352

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P416352

Component	Result	Code	Units
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	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	0.0040	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: EPA 8321B

Batch ID: P416535

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P416387

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

Reference Method: SM 2540 C-2011

Batch ID: P416545

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P416548

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P416404

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416394

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: P416280

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416392

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

Reference Method: EPA 8321B
Batch ID: P416352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.2		P	40 - 150
2,4,5-T	52.8		P	40 - 150
Acetaminophen	89.6		P	30 - 150
Acetamiprid	68.2		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P416352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Afidopyropen	40.1		P	30 - 150
Bentazon	53.8		P	30 - 150
Benzovindiflupyr	76.8		P	40 - 150
Carbamazepine	83.5		P	40 - 150
Clothianidin	96.4		P	40 - 150
Dinotefuran	94.1		P	40 - 150
Diuron	76.0		P	40 - 150
Fenuron	92.0		P	40 - 150
Fluridone	79.4		P	40 - 150
Hydrocodone	87.9		P	40 - 150
Ibuprofen	64.6		P	40 - 150
Imazapyr	89.1		P	40 - 150
Imidacloprid	97.8		P	40 - 150
Linuron	63.1		P	40 - 150
Mandestrobin	79.2		P	40 - 150
MCPP	73.0		P	40 - 150
Naproxen	43.8		P	40 - 150
Primidone	81.3		P	40 - 150
Pyraclostrobin	69.8		P	40 - 150
Silvex	58.4		P	40 - 150
Thiamethoxam	87.1		P	40 - 150
Tolfenpyrad	33.6		P	30 - 150
Triclopyr	54.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P416535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	78.7		P	40 - 150
AMPA	111		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	123		P	40 - 150
Glyphosate	104		P	40 - 150
Sucralose	97.1		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P416387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P416404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339346	Chloride	97.0		P	90 - 110
2339373	Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339346	Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339524	Ammonia-N	97.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339023	Kjeldahl Nitrogen	98.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339377	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339929	Total-P	95.4	94.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339492	2,4-D	82.4	76.3	P/P	40 - 150
2339492	2,4,5-T	56.3	46.9	P/P	40 - 150
2339492	Acetaminophen	123	115	P/P	30 - 150
2339492	Acetamiprid	90.4	112	P/P	40 - 150
2339492	Afidopyropen	64.5	75.4	P/P	30 - 150
2339492	Bentazon	43.2	46.3	P/P	30 - 150
2339492	Benzovindiflupyr	82.8	89.3	P/P	40 - 150
2339492	Carbamazepine	87.9	89.8	P/P	40 - 150
2339492	Clothianidin	109	121	P/P	40 - 150
2339492	Diuron	69.9	73.9	P/P	40 - 150
2339492	Fenuron	91.6	91.6	P/P	40 - 150
2339492	Fluridone	85.3	82.1	P/P	40 - 150
2339492	Hydrocodone	110	107	P/P	40 - 150
2339492	Ibuprofen	65.8	71.4	P/P	40 - 150
2339492	Imazapyr	90.1	88.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P416352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339492	Imidacloprid	132	151	P/F	40 - 150
2339492	Linuron	68.2	79.8	P/P	40 - 150
2339492	Mandestrobin	83.8	87.8	P/P	40 - 150
2339492	MCPP	70.1	72.4	P/P	40 - 150
2339492	Naproxen	68.2	66.9	P/P	40 - 150
2339492	Primidone	113	111	P/P	40 - 150
2339492	Pyraclostrobin	84.1	87.4	P/P	40 - 150
2339492	Silvex	68.5	67.3	P/P	40 - 150
2339492	Tolfenpyrad	43.2	48.6	P/P	30 - 150
2339492	Triclopyr	58.5	56.7	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P416535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338847	Acesulfame K	74.7	77.2	P/P	40 - 150
2338847	AMPA	116	118	P/P	40 - 150
2338847	Endothall	100	97.4	P/P	40 - 150
2338847	Glufosinate	110	117	P/P	40 - 150
2338847	Glyphosate	106	105	P/P	40 - 150
2338847	Sucralose	96.6	96.7	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P416404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339553	Fluoride	104	103	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P416394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339375	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339370	Color (true)	1.30	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339370	Turbidity	3.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339346	Chloride	0.0815	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339346	Sulfate	1.77	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339524	Ammonia-N	2.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339023	Kjeldahl Nitrogen	1.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339377	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339929	Total-P	0.389	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P416352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339492	2,4-D	7.75	Spike	P	0 - 30
2339492	2,4,5-T	18.1	Spike	P	0 - 30
2339492	Acetaminophen	6.53	Spike	P	0 - 30
2339492	Acetamiprid	21.5	Spike	P	0 - 30
2339492	Afidopyropen	15.5	Spike	P	0 - 30
2339492	Bentazon	6.92	Spike	P	0 - 30
2339492	Benzovindiflupyr	7.54	Spike	P	0 - 30
2339492	Carbamazepine	2.16	Spike	P	0 - 30
2339492	Clothianidin	6.59	Spike	P	0 - 30
2339492	Dinotefuran	2.99	Spike	P	0 - 30
2339492	Diuron	5.58	Spike	P	0 - 30
2339492	Fenuron	0.0265	Spike	P	0 - 30
2339492	Fluridone	3.83	Spike	P	0 - 30
2339492	Hydrocodone	3.28	Spike	P	0 - 30
2339492	Ibuprofen	8.19	Spike	P	0 - 30
2339492	Imazapyr	1.02	Spike	P	0 - 30
2339492	Imidacloprid	9.31	Spike	P	0 - 30
2339492	Linuron	15.8	Spike	P	0 - 30
2339492	Mandestrobin	4.57	Spike	P	0 - 30
2339492	MCP	3.20	Spike	P	0 - 30
2339492	Naproxen	1.85	Spike	P	0 - 30
2339492	Primidone	2.01	Spike	P	0 - 30
2339492	Pyraclostrobin	3.87	Spike	P	0 - 30
2339492	Silvex	1.80	Spike	P	0 - 30
2339492	Thiamethoxam	9.03	Spike	P	0 - 30
2339492	Tolfenpyrad	11.8	Spike	P	0 - 30
2339492	Triclopyr	3.24	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P416535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338847	Acesulfame K	3.24	Spike	P	0 - 30
2338847	AMPA	1.64	Spike	P	0 - 30
2338847	Endothall	2.65	Spike	P	0 - 30
2338847	Glufosinate	5.62	Spike	P	0 - 30
2338847	Glyphosate	0.887	Spike	P	0 - 30
2338847	Sucralose	0.148	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P416387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339553	Total Alkalinity	0.0629	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P416545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338875	TDS	5.46	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P416404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339553	Fluoride	0.480	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339375	Organic Carbon	0.331	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2339490

Field Sample ID: G2SW0144

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.1	P	30 - 160
EPA 8321B	Diuron-d6	56.2	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.0	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	95.2	P	30 - 160

Lab Sample ID: 2339491

Field Sample ID: G2SW0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.6	P	30 - 160
EPA 8321B	Diuron-d6	57.0	P	30 - 160
EPA 8321B	Endothall-d6	155	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.7	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	98.4	P	30 - 160

Lab Sample ID: 2339492

Field Sample ID: G2SW0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	121	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.6	P	30 - 160
EPA 8321B	Diuron-d6	72.5	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.6	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A113337

Included Lab Sample IDs: 2339471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.5	99.2	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113341

Included Lab Sample IDs: 2339471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A113406

Included Lab Sample IDs: 2339471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	98.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113406

Included Lab Sample IDs: 2339471

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

Reference Method: SM 5310 B-2011

Run ID: A113409

Included Lab Sample IDs: 2339472

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113417

Included Lab Sample IDs: 2339472

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113460

Included Lab Sample IDs: 2339490, 2339491, 2339492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	115	119	P/P	60 - 160
AMPA	120	115	P/P	60 - 160
Endothall	97.0	94.4	P/P	60 - 160
Glufosinate	106	113	P/P	60 - 160
Glyphosate	108	109	P/P	60 - 160
Glyphosate	112	108	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113462

Included Lab Sample IDs: 2339471

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	96.2	P/P	90 - 110
Sulfate	95.6	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113464

Included Lab Sample IDs: 2339490, 2339491, 2339492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	108	P/P	50 - 150
2,4-D	109	109	P/P	50 - 150
2,4,5-T	115	117	P/P	50 - 150
2,4,5-T	128	115	P/P	50 - 150
Acetaminophen	105	107	P/P	60 - 160
Acetaminophen	107	108	P/P	60 - 160
Acetamiprid	106	112	P/P	50 - 150
Acetamiprid	112	113	P/P	50 - 150
Afidopyropen	102	107	P/P	50 - 150
Afidopyropen	99.2	102	P/P	50 - 150
Bentazon	101	89.9	P/P	50 - 160
Bentazon	89.9	92.9	P/P	50 - 160
Benzovindiflupyr	109	117	P/P	50 - 150
Benzovindiflupyr	111	109	P/P	50 - 150
Carbamazepine	111	112	P/P	60 - 150
Carbamazepine	112	114	P/P	60 - 150
Clothianidin	107	97.1	P/P	60 - 150
Clothianidin	107	107	P/P	60 - 150
Dinotefuran	106	107	P/P	50 - 150
Dinotefuran	107	106	P/P	50 - 150
Diuron	102	105	P/P	60 - 160
Diuron	105	100	P/P	60 - 160
Fenuron	101	104	P/P	60 - 150
Fenuron	104	101	P/P	60 - 150
Fluridone	109	103	P/P	60 - 160
Fluridone	118	109	P/P	60 - 160
Hydrocodone	105	104	P/P	60 - 150
Hydrocodone	107	105	P/P	60 - 150
Ibuprofen	113	125	P/P	50 - 160
Ibuprofen	138	113	P/P	50 - 160
Imazapyr	101	108	P/P	50 - 150
Imazapyr	110	101	P/P	50 - 150
Imidacloprid	103	98.8	P/P	60 - 150
Imidacloprid	98.8	100	P/P	60 - 150
Imidacloprid	98.8	111	P/P	60 - 150
Linuron	107	109	P/P	60 - 150
Linuron	109	104	P/P	60 - 150
Mandestrobin	110	109	P/P	50 - 150
Mandestrobin	112	110	P/P	50 - 150
MCP	111	112	P/P	50 - 150
MCP	112	116	P/P	50 - 150
Naproxen	108	131	P/P	50 - 160
Naproxen	95.5	108	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A113464

Included Lab Sample IDs: 2339490, 2339491, 2339492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	84.7	93.8	P/P	60 - 150
Primidone	93.8	97.7	P/P	60 - 150
Pyraclostrobin	108	109	P/P	60 - 150
Pyraclostrobin	110	108	P/P	60 - 150
Silvex	104	119	P/P	50 - 150
Silvex	115	104	P/P	50 - 150
Thiamethoxam	103	102	P/P	50 - 150
Thiamethoxam	105	103	P/P	50 - 150
Tolfenpyrad	105	99.3	P/P	60 - 150
Tolfenpyrad	99.3	97.3	P/P	60 - 150
Triclopyr	124	125	P/P	50 - 150
Triclopyr	125	112	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113465

Included Lab Sample IDs: 2339472

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113477

Included Lab Sample IDs: 2339472

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

Reference Method: EPA 8321B

Run ID: A113494

Included Lab Sample IDs: 2339490, 2339491, 2339492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.5	94.2	P/P	60 - 160
Sucralose	98.9	97.8	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113548

Included Lab Sample IDs: 2339472

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	97.7	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)	100				1.30	
EPA 180.1 Rev. 2.0	Turbidity	96.8				3.40	
EPA 300.0 Rev. 2.1	Chloride	96.1	97.0	94.2		0.0815	
	Sulfate	96.2	97.2			1.77	
EPA 350.1 Rev. 2.0	Ammonia-N	93.0	97.0	100			2.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1	98.0	101			1.61
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	97.2				0.0
EPA 365.1 Rev. 2.0	Total-P	102	95.4	94.9			0.389
EPA 8321B	2,4-D	71.2	82.4	76.3			7.75
	2,4,5-T	52.8	56.3	46.9			18.1
	Acesulfame K	78.7	74.7	77.2			3.24
	Acetaminophen	89.6	123	115			6.53
	Acetamiprid	68.2	90.4	112			21.5
	Afidopyropen	40.1	64.5	75.4			15.5
	AMPA	111	116	118			1.64
	Bentazon	53.8	43.2	46.3			6.92
	Benzovindiflupyr	76.8	82.8	89.3			7.54
	Carbamazepine	83.5	87.9	89.8			2.16
	Clothianidin	96.4	109	121			6.59
	Dinotefuran	94.1					2.99
	Diuron	76.0	69.9	73.9			5.58
	Endothall	103	100	97.4			2.65
	Fenuron	92.0	91.6	91.6			0.0265
	Fluridone	79.4	85.3	82.1			3.83
	Glufosinate	123	110	117			5.62
	Glyphosate	104	106	105			0.887
	Hydrocodone	87.9	110	107			3.28
	Ibuprofen	64.6	65.8	71.4			8.19
	Imazapyr	89.1	90.1	88.7			1.02
	Imidacloprid	97.8	132	151			9.31
	Linuron	63.1	68.2	79.8			15.8
	Mandestrobin	79.2	83.8	87.8			4.57
	MCPP	73.0	70.1	72.4			3.20
	Naproxen	43.8	68.2	66.9			1.85
	Primidone	81.3	113	111			2.01
	Pyraclostrobin	69.8	84.1	87.4			3.87
	Silvex	58.4	68.5	67.3			1.80
	Sucralose	97.1	96.6	96.7			0.148
	Thiamethoxam	87.1					9.03
	Tolfenpyrad	33.6	43.2	48.6			11.8
	Triclopyr	54.8	58.5	56.7			3.24
SM 2320 B-2011	Total Alkalinity	101				0.0629	
SM 2540 C-2011	TDS					5.46	
SM 4500-F- C-2011	Fluoride	102	104	103			0.480
SM 5310 B-2011	Organic Carbon	97.3	100	101			0.331

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2339471
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2339471
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2339471
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2339471

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2339472
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2339472
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2339472
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2339472
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2339490, 2339491, 2339492
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2339471
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2339471
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2339471
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2339471
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2339472

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	07/07/2022			07/07/2022 14:25	Blanca Fach	2339471
EPA 180.1 Rev. 2.0	07/07/2022			07/07/2022 13:55	Anna M. Plaviak	2339471
EPA 300.0 Rev. 2.1	07/07/2022			07/14/2022 16:27	Anna M. Plaviak	2339471
EPA 350.1 Rev. 2.0	07/07/2022			07/11/2022 11:33	Ping Hua	2339472
EPA 351.2 Rev. 2.0	07/07/2022	07/14/2022 13:55	Samantha L Bates	07/15/2022 19:20	Alexandra J Mattheus	2339472
EPA 353.2 Rev. 2.0	07/07/2022			07/13/2022 10:29	Beverly Y. Sanders	2339472
EPA 365.1 Rev. 2.0	07/07/2022	07/13/2022 09:52	Adam P Silver	07/13/2022 14:13	James L Waggeberby	2339472
EPA 8321B	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 13:47	Umesh Chiluwal	2339490
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 14:00	Umesh Chiluwal	2339491
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 14:13	Umesh Chiluwal	2339492
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 17:15	Umesh Chiluwal	2339491
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 23:21	Umesh Chiluwal	2339490
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 23:36	Umesh Chiluwal	2339491
	07/07/2022	07/11/2022 10:00	Umesh Chiluwal	07/11/2022 23:51	Umesh Chiluwal	2339492
	07/07/2022	07/12/2022 09:00	June Rhew	07/12/2022 18:08	Juyoung Kim	2339492
	07/07/2022	07/12/2022 09:00	June Rhew	07/12/2022 21:15	Juyoung Kim	2339490
	07/07/2022	07/12/2022 09:00	June Rhew	07/12/2022 21:36	Juyoung Kim	2339491
	07/07/2022	07/12/2022 09:00	June Rhew	07/13/2022 09:40	Juyoung Kim	2339490
SM 2320 B-2011	07/07/2022			07/09/2022 09:52	Dale L. Simmons	2339471
SM 2540 C-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339471
SM 2540 D-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339471
SM 4500-F- C-2011	07/07/2022			07/09/2022 09:52	Dale L. Simmons	2339471
SM 5310 B-2011	07/07/2022			07/08/2022 19:43	Khloe J Berg	2339472