

Chemical Analysis Report

SW-DIST-2022-07-12-01

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

Event Description: **SMP:: Run 12**
Request ID: **RQ-2022-07-11-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-AUG-2022 14:42

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Lake Hanna Outlet @ Livingston Ave

Collection Date/Time: 07/11/2022 10:10

Field ID: G2SW0143

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340473	DEP SOP: NU-094-1	Color (true)	44		PCU	P416500	
	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P416508	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P416960	
		Sulfate	11		mg SO4/L	P416964	
	SM 2320 B-2011	Total Alkalinity	114		mg CaCO3/L	P416839	
	SM 2540 C-2011	TDS	251		mg/L	P416903	
	SM 2540 D-2011	TSS	3	I	mg/L	P416817	
	SM 4500-F- C-2011	Fluoride	0.053	I	mg F/L	P417357	MS
2340475	EPA 350.1 Rev. 2.0	Ammonia-N	3.2		mg N/L	P416929	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.9		mg N/L	P416705	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P416740	
	EPA 365.1 Rev. 2.0	Total-P	0.71		mg P/L	P416691	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P416723	

Ref. Method and Comment:

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

Sample Location: Hollin Creek @ Cypress Run Golf Club

Collection Date/Time: 07/11/2022 11:45

Field ID: G5SW0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340492	EPA 8321B	2,4-D	0.0020	U	ug/L	P416544	
		Acesulfame K	0.10	U	ug/L	P416474	
		2,4,5-T	0.0040	U	ug/L	P416544	
		AMPA	0.28	I	ug/L	P416474	
		Acetaminophen	0.0080	U	ug/L	P416544	
		Acetamiprid	0.0020	U	ug/L	P416544	
		Endothall	0.25	U	ug/L	P416474	
		Glufosinate	0.10	U	ug/L	P416474	
		Glyphosate	0.38	I	ug/L	P416474	
		Afidopyropen	0.0020	U	ug/L	P416544	
		Bentazon	0.037		ug/L	P416544	
		Sucralose	0.030	I	ug/L	P416474	
		Benzovindiflupyr	0.0020	U	ug/L	P416544	
		Carbamazepine	8.0E-04	U	ug/L	P416544	
		Clothianidin	0.0020	U	ug/L	P416544	
		Dinotefuran	0.0020	U	ug/L	P416544	
		Diuron	0.0035	I	ug/L	P416544	
		Fenuron	0.032	U	ug/L	P416544	
		Fluridone	0.021		ug/L	P416544	
		Imazapyr	0.21		ug/L	P416544	
		Hydrocodone	0.0020	U	ug/L	P416544	
		Ibuprofen	0.080	U	ug/L	P416544	
		Imidacloprid	0.0069	I	ug/L	P416544	
		Linuron	0.0040	U	ug/L	P416544	
		Mandestrobin	0.0020	U	ug/L	P416544	
		MCPP	0.0040	U	ug/L	P416544	
		Naproxen	0.0080	U	ug/L	P416544	
		Primidone	0.0040	U	ug/L	P416544	
		Pyraclostrobin	0.0020	U	ug/L	P416544	
		Silvex	0.0040	U	ug/L	P416544	
		Thiamethoxam	0.0020	U	ug/L	P416544	
		Tolfenpyrad	0.0020	U	ug/L	P416544	
		Triclopyr	0.0040	U	ug/L	P416544	

Sample Location: Lake Hanna Outlet @ Hanna Road

Collection Date/Time: 07/11/2022 09:50

Field ID: G2SW0142

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2340474	DEP SOP: NU-094-1	Color (true)	44	A	PCU	P416500	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P416508	
	EPA 300.0 Rev. 2.1	Chloride	39		mg Cl/L	P416960	
		Sulfate	4.1		mg SO4/L	P416964	
	SM 2320 B-2011	Total Alkalinity	34		mg CaCO3/L	P416839	
	SM 2540 C-2011	TDS	132		mg/L	P416903	
	SM 2540 D-2011	TSS	2	I	mg/L	P416817	
	SM 4500-F- C-2011	Fluoride	0.087	I	mg F/L	P417357	MS
2340476	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P416931	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P416705	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P416741	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P416691	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P416723	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P416500

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416508

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416960

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416964

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416929

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416931

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416705

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416740

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416741

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: P416691

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

Reference Method: EPA 8321B

Batch ID: P416474

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: P416544

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	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: P416839

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P416903

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416817

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417357

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416723

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: P416500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416960

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416964

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416929

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416705

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416740

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416741

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: P416691

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

Reference Method: EPA 8321B

Batch ID: P416474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	88.1		P	40 - 150
AMPA	113		P	40 - 150
Endothall	80.3		P	40 - 150
Glufosinate	111		P	40 - 150
Glyphosate	108		P	40 - 150
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P416544

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	77.5		P	40 - 150
2,4,5-T	71.2		P	40 - 150
Acetaminophen	93.5		P	30 - 150
Acetamiprid	85.0		P	40 - 150
Afidopyropen	60.7		P	30 - 150
Bentazon	97.0		P	30 - 150
Benzovindiflupyr	90.0		P	40 - 150
Carbamazepine	93.0		P	40 - 150
Clothianidin	100		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	84.7		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	99.3		P	40 - 150
Hydrocodone	97.9		P	40 - 150
Ibuprofen	82.0		P	40 - 150
Imazapyr	94.2		P	40 - 150
Imidacloprid	110		P	40 - 150
Linuron	104		P	40 - 150
Mandestrobin	89.0		P	40 - 150
MCPP	83.2		P	40 - 150
Naproxen	64.4		P	40 - 150
Primidone	101		P	40 - 150
Pyraclostrobin	81.3		P	40 - 150
Silvex	67.7		P	40 - 150
Thiamethoxam	99.6		P	40 - 150
Tolfenpyrad	44.7		P	30 - 150
Triclopyr	77.4		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P416839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P417357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416723

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340509	Chloride	99.1		P	90 - 110
2340627	Chloride	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340509	Sulfate	96.1		P	90 - 110
2340627	Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340457	Ammonia-N	100	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340500	Ammonia-N	97.4	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340081	Kjeldahl Nitrogen	98.7	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340420	NO2NO3-N	99.1	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340476	NO2NO3-N	99.2	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340467	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340387	Acesulfame K	75.9	76.4	P/P	40 - 150
2340387	AMPA	96.9	97.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P416474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340387	Endothall	83.3	81.1	P/P	40 - 150
2340387	Glufosinate	72.7	70.8	P/P	40 - 150
2340387	Glyphosate	84.2	88.5	P/P	40 - 150
2340387	Sucralose	98.5	99.2	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P416544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340387	2,4-D	88.3	84.5	P/P	40 - 150
2340387	2,4,5-T	60.0	67.6	P/P	40 - 150
2340387	Acetaminophen	113	107	P/P	30 - 150
2340387	Acetamiprid	86.8	87.1	P/P	40 - 150
2340387	Afidopyropen	74.5	74.7	P/P	30 - 150
2340387	Bentazon	85.4	84.3	P/P	30 - 150
2340387	Benzovindiflupyr	87.7	89.8	P/P	40 - 150
2340387	Carbamazepine	97.3	97.1	P/P	40 - 150
2340387	Clothianidin	115	119	P/P	40 - 150
2340387	Dinotefuran	139	135	P/P	40 - 150
2340387	Diuron	83.6	69.2	P/P	40 - 150
2340387	Fenuron	90.4	92.5	P/P	40 - 150
2340387	Fluridone	81.6	88.4	P/P	40 - 150
2340387	Hydrocodone	101	104	P/P	40 - 150
2340387	Ibuprofen	72.6	73.6	P/P	40 - 150
2340387	Imazapyr	92.3	86.0	P/P	40 - 150
2340387	Imidacloprid	146	149	P/P	40 - 150
2340387	Linuron	88.3	91.2	P/P	40 - 150
2340387	Mandestrobin	76.2	80.5	P/P	40 - 150
2340387	MCP	94.9	80.0	P/P	40 - 150
2340387	Naproxen	74.9	86.2	P/P	40 - 150
2340387	Primidone	101	107	P/P	40 - 150
2340387	Pyraclostrobin	85.9	89.4	P/P	40 - 150
2340387	Silvex	70.9	82.8	P/P	40 - 150
2340387	Thiamethoxam	129	135	P/P	40 - 150
2340387	Tolfenpyrad	49.4	49.6	P/P	30 - 150
2340387	Triclopyr	71.7	80.8	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P417357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340221	Fluoride	103	104	P/F	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P416723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340375	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340474	Color (true)	0.551	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340523	Turbidity	2.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340509	Chloride	0.303	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340509	Sulfate	0.200	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340457	Ammonia-N	2.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340500	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340081	Kjeldahl Nitrogen	2.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340420	NO2NO3-N	1.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P416741

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340476	NO2NO3-N	2.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P416691

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340467	Total-P	0.513	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P416474

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340387	Acesulfame K	0.698	Spike	P	0 - 30
2340387	AMPA	0.270	Spike	P	0 - 30
2340387	Endothall	2.66	Spike	P	0 - 30
2340387	Glufosinate	2.62	Spike	P	0 - 30
2340387	Glyphosate	5.07	Spike	P	0 - 30
2340387	Sucralose	0.509	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P416544

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340387	2,4-D	3.08	Spike	P	0 - 30
2340387	2,4,5-T	12.0	Spike	P	0 - 30
2340387	Acetaminophen	5.18	Spike	P	0 - 30
2340387	Acetamiprid	0.388	Spike	P	0 - 30
2340387	Afidopyropen	0.284	Spike	P	0 - 30
2340387	Bentazon	0.830	Spike	P	0 - 30
2340387	Benzovindiflupyr	2.40	Spike	P	0 - 30
2340387	Carbamazepine	0.259	Spike	P	0 - 30
2340387	Clothianidin	3.83	Spike	P	0 - 30
2340387	Dinotefuran	2.76	Spike	P	0 - 30
2340387	Diuron	18.2	Spike	P	0 - 30
2340387	Fenuron	2.34	Spike	P	0 - 30
2340387	Fluridone	7.92	Spike	P	0 - 30
2340387	Hydrocodone	3.04	Spike	P	0 - 30
2340387	Ibuprofen	1.44	Spike	P	0 - 30
2340387	Imazapyr	7.09	Spike	P	0 - 30
2340387	Imidacloprid	1.69	Spike	P	0 - 30
2340387	Linuron	3.16	Spike	P	0 - 30
2340387	Mandestrobin	5.41	Spike	P	0 - 30
2340387	MCPP	17.0	Spike	P	0 - 30
2340387	Naproxen	14.0	Spike	P	0 - 30
2340387	Primidone	5.65	Spike	P	0 - 30
2340387	Pyraclostrobin	4.02	Spike	P	0 - 30
2340387	Silvex	15.5	Spike	P	0 - 30
2340387	Thiamethoxam	4.54	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P416544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340387	Tolfenpyrad	0.481	Spike	P	0 - 30
2340387	Triclopyr	11.9	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P416839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340697	Total Alkalinity	1.00	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P416903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340374	TDS	7.54	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340221	Fluoride	0.953	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340375	Organic Carbon	0.0996	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2340492

Field Sample ID: G5SW0186

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.7	P	30 - 160
EPA 8321B	Diuron-d6	71.3	P	30 - 160
EPA 8321B	Endothall-d6	134	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.6	P	30 - 160
EPA 8321B	Primidone-d5	96.1	P	30 - 160
EPA 8321B	Sucralose-d6	99.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A113443

Included Lab Sample IDs: 2340473, 2340474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113445

Included Lab Sample IDs: 2340473, 2340474

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

Reference Method: EPA 8321B

Run ID: A113489

Included Lab Sample IDs: 2340492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	117	P/P	60 - 160
Endothall	78.0	93.3	P/P	60 - 160
Glufosinate	95.9	120	P/P	60 - 160
Glyphosate	103	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113497

Included Lab Sample IDs: 2340492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.5	89.9	P/P	60 - 160
Sucralose	102	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113508

Included Lab Sample IDs: 2340492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.9	100	P/P	50 - 150
2,4,5-T	114	108	P/P	50 - 150
Acetaminophen	96.5	99.0	P/P	60 - 160
Acetamiprid	101	98.0	P/P	50 - 150
Afidopyropen	100	92.2	P/P	50 - 150
Bentazon	128	113	P/P	50 - 160
Benzovindiflupyr	97.5	97.4	P/P	50 - 150
Carbamazepine	105	101	P/P	60 - 150
Clothianidin	94.3	106	P/P	60 - 150
Dinotefuran	99.4	102	P/P	50 - 150
Diuron	86.0	88.1	P/P	60 - 160
Fenuron	100	103	P/P	60 - 150
Fluridone	112	104	P/P	60 - 160
Hydrocodone	98.4	103	P/P	60 - 150
Ibuprofen	92.6	113	P/P	50 - 160
Imazapyr	97.3	115	P/P	50 - 150
Imidacloprid	99.8	97.3	P/P	60 - 150
Linuron	96.4	97.2	P/P	60 - 150
Mandestrobin	103	103	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113508
Included Lab Sample IDs: 2340492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCPD	112	96.1	P/P	50 - 150
Naproxen	139	145	P/P	50 - 160
Primidone	101	99.9	P/P	60 - 150
Pyraclostrobin	104	102	P/P	60 - 150
Silvex	93.3	81.0	P/P	50 - 150
Thiamethoxam	102	101	P/P	50 - 150
Tolfenpyrad	103	103	P/P	60 - 150
Triclopyr	112	99.8	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A113531
Included Lab Sample IDs: 2340475, 2340476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113536
Included Lab Sample IDs: 2340475, 2340476

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

Reference Method: SM 2320 B-2011
Run ID: A113576
Included Lab Sample IDs: 2340473, 2340474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113580
Included Lab Sample IDs: 2340475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113582
Included Lab Sample IDs: 2340475, 2340476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113583
Included Lab Sample IDs: 2340476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113621

Included Lab Sample IDs: 2340475, 2340476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	98.6	P/P	90 - 110
Ammonia-N	99.1	97.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113634

Included Lab Sample IDs: 2340473, 2340474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	99.9	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113778

Included Lab Sample IDs: 2340473, 2340474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	101	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)	99.1				0.551	
EPA 180.1 Rev. 2.0	Turbidity	95.3				2.19	
EPA 300.0 Rev. 2.1	Chloride	101	99.1	97.0		0.303	
	Sulfate	100	96.1	96.5		0.200	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	97.2			2.23
	Ammonia-N	96.4	97.4	98.6			1.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.7	103			2.67
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.1	101			1.45
	NO2NO3-N	102	99.2	102			2.52
EPA 365.1 Rev. 2.0	Total-P	104	104	104			0.513
EPA 8321B	2,4-D	77.5	88.3	84.5			3.08
	2,4,5-T	71.2	60.0	67.6			12.0
	Acesulfame K	88.1	75.9	76.4			0.698
	Acetaminophen	93.5	113	107			5.18
	Acetamiprid	85.0	86.8	87.1			0.388
	Afidopyropen	60.7	74.5	74.7			0.284
	AMPA	113	96.9	97.2			0.270
	Bentazon	97.0	85.4	84.3			0.830
	Benzovindiflupyr	90.0	87.7	89.8			2.40
	Carbamazepine	93.0	97.3	97.1			0.259
	Clothianidin	100	115	119			3.83
	Dinotefuran	104	139	135			2.76
	Diuron	84.7	83.6	69.2			18.2
	Endothall	80.3	83.3	81.1			2.66
	Fenuron	107	90.4	92.5			2.34
	Fluridone	99.3	81.6	88.4			7.92
	Glufosinate	111	72.7	70.8			2.62
	Glyphosate	108	84.2	88.5			5.07
	Hydrocodone	97.9	101	104			3.04
	Ibuprofen	82.0	72.6	73.6			1.44
	Imazapyr	94.2	92.3	86.0			7.09
	Imidacloprid	110	146	149			1.69
	Linuron	104	88.3	91.2			3.16
	Mandestrobin	89.0	76.2	80.5			5.41
	MCPP	83.2	94.9	80.0			17.0
	Naproxen	64.4	74.9	86.2			14.0
	Primidone	101	101	107			5.65
	Pyraclostrobin	81.3	85.9	89.4			4.02
	Silvex	67.7	70.9	82.8			15.5
	Sucralose	105	98.5	99.2			0.509
	Thiamethoxam	99.6	129	135			4.54
	Tolfenpyrad	44.7	49.4	49.6			0.481
	Triclopyr	77.4	71.7	80.8			11.9
SM 2320 B-2011	Total Alkalinity	99.5				1.00	
SM 2540 C-2011	TDS					7.54	
SM 4500-F- C-2011	Fluoride	103	103	104			0.953
SM 5310 B-2011	Organic Carbon	98.3	100	100			0.0996

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2340473, 2340474
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2340473, 2340474

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2340473, 2340474
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2340473, 2340474
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2340475, 2340476
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2340475, 2340476
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2340475, 2340476
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2340475, 2340476
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2340492
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2340473, 2340474
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2340473, 2340474
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2340473, 2340474
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2340473, 2340474
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2340475, 2340476

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	07/12/2022			07/12/2022 15:51	Samantha L Bates	2340473
	07/12/2022			07/12/2022 15:53	Samantha L Bates	2340474
EPA 180.1 Rev. 2.0	07/12/2022			07/12/2022 14:01	Khloe J Berg	2340473
	07/12/2022			07/12/2022 14:15	Khloe J Berg	2340474
EPA 300.0 Rev. 2.1	07/12/2022			07/20/2022 00:33	Anna M. Plaviak	2340473
	07/12/2022			07/20/2022 00:45	Anna M. Plaviak	2340474
EPA 350.1 Rev. 2.0	07/12/2022			07/20/2022 13:39	Ping Hua	2340475
	07/12/2022			07/20/2022 14:27	Ping Hua	2340476
EPA 351.2 Rev. 2.0	07/12/2022	07/18/2022 16:27	Samantha L Bates	07/19/2022 11:48	Alexandra J Mattheus	2340475
	07/12/2022	07/18/2022 16:27	Samantha L Bates	07/19/2022 11:49	Alexandra J Mattheus	2340476
EPA 353.2 Rev. 2.0	07/12/2022			07/15/2022 12:02	Judith K. Clark	2340475
	07/12/2022			07/15/2022 12:09	Judith K. Clark	2340476
EPA 365.1 Rev. 2.0	07/12/2022	07/18/2022 14:52	Adam P Silver	07/19/2022 09:38	James L Waggeberby	2340475
	07/12/2022	07/18/2022 14:52	Adam P Silver	07/19/2022 14:36	James L Waggeberby	2340476
EPA 8321B	07/12/2022	07/13/2022 11:00	Umesh Chiluwal	07/13/2022 13:31	Umesh Chiluwal	2340492
	07/12/2022	07/13/2022 11:00	Umesh Chiluwal	07/14/2022 00:12	Umesh Chiluwal	2340492
	07/12/2022	07/14/2022 09:00	June Rhew	07/14/2022 16:47	Juyoung Kim	2340492
SM 2320 B-2011	07/12/2022			07/15/2022 05:42	Dale L. Simmons	2340473
	07/12/2022			07/15/2022 05:55	Dale L. Simmons	2340474
SM 2540 C-2011	07/12/2022			07/13/2022 16:09	Yijie Li	2340473, 2340474
SM 2540 D-2011	07/12/2022			07/13/2022 16:09	Yijie Li	2340473, 2340474
SM 4500-F- C-2011	07/12/2022			07/29/2022 06:03	Dale L. Simmons	2340473
	07/12/2022			07/29/2022 06:08	Dale L. Simmons	2340474
SM 5310 B-2011	07/12/2022			07/14/2022 21:24	Khloe J Berg	2340475
	07/12/2022			07/14/2022 21:38	Khloe J Berg	2340476