

Chemical Analysis Report

TLH-ROC-2022-06-27-02

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

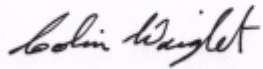
Event Description: **Run 16**
Request ID: **RQ-2022-06-06-68**
Customer: **TLH-ROC**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 19-JUL-2022 08:52



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: Williford Spring

Collection Date/Time: 06/27/2022 09:45

Field ID: G3TLHR0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2337373	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P415909	
	EPA 180.1 Rev. 2.0	Turbidity	0.20	I	NTU	P415901	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P416148	
		Sulfate	1.3		mg SO4/L	P416151	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P416070	
	SM 2540 C-2011	TDS	80		mg/L	P416222	
	SM 2540 D-2011	TSS	2	U	mg/L	P416189	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P416338	
	2337375	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P415992
		EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P415921
		EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P416485
		EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P416023
	SM 5310 B-2011	Organic Carbon	0.69	I	mg C/L	P416028	

Sample Location: Merial Lake Center

Collection Date/Time: 06/27/2022 10:15

Field ID: G3TLHR0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2337374	DEP SOP: NU-094-1	Color (true)	4.1	I	PCU	P415909	
	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P415901	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P416148	
		Sulfate	1.9		mg SO4/L	P416151	
	SM 2320 B-2011	Total Alkalinity	1.1	I	mg CaCO3/L	P416070	
	SM 2540 C-2011	TDS	21	I	mg/L	P416224	
	SM 2540 D-2011	TSS	2	I	mg/L	P416191	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P416338	
2337376	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P415992	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P415921	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416485	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P416023	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P416028	

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: Bayou George upstream John Pitts Rd

Collection Date/Time: 06/27/2022 12:50

Field ID: G3TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2337377	DEP SOP: NU-094-1	Color (true)	180		PCU	P415909	
	EPA 180.1 Rev. 2.0	Turbidity	7.7		NTU	P415901	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P416148	
		Sulfate	1.8		mg SO4/L	P416151	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P416073	
	SM 2540 C-2011	TDS	61		mg/L	P416224	
	SM 2540 D-2011	TSS	4	I	mg/L	P416191	
2337378	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P416338	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P415992	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51	J	mg N/L	P416110	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.46		mg N/L	P416403	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P416023	
2337386	SM 5310 B-2011	Organic Carbon	12		mg C/L	P416028	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P415828	
		Acesulfame K	0.10	U	ug/L	P415853	
		AMPA	0.10	U	ug/L	P415853	
		2,4,5-T	0.0040	U	ug/L	P415828	MS
		Acetaminophen	0.016	I	ug/L	P415828	
		Acetamiprid	0.0020	U	ug/L	P415828	
		Endothall	0.25	U	ug/L	P415853	
		Glufosinate	0.10	U	ug/L	P415853	
		Glyphosate	0.10	U	ug/L	P415853	
		Afidopyropen	0.0020	U	ug/L	P415828	
		Bentazon	8.0E-04	U	ug/L	P415828	
		Sucralose	0.026	I	ug/L	P415853	
		Benzovindiflupyr	0.0020	U	ug/L	P415828	
		Carbamazepine	8.0E-04	U	ug/L	P415828	
		Clothianidin	0.0020	U	ug/L	P415828	
		Dinotefuran	0.0020	U	ug/L	P415828	
		Diuron	0.0020	U	ug/L	P415828	
		Fenuron	0.032	U	ug/L	P415828	
		Fluridone	8.0E-04	U	ug/L	P415828	
		Imazapyr	0.046		ug/L	P415828	
		Hydrocodone	0.0020	U	ug/L	P415828	
		Ibuprofen	0.080	U	ug/L	P415828	
		Imidacloprid	0.0020	U	ug/L	P415828	
		Linuron	0.0040	U	ug/L	P415828	
		Mandestrobin	0.0020	U	ug/L	P415828	
		MCPP	0.0040	U	ug/L	P415828	
		Naproxen	0.0080	U	ug/L	P415828	
		Primidone	0.0040	U	ug/L	P415828	
		Pyraclostrobin	0.0020	U	ug/L	P415828	
		Silvex	0.0040	U	ug/L	P415828	
		Thiamethoxam	0.0020	U	ug/L	P415828	

Field ID: G3TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2337386	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P415828	
		Triclopyr	0.0040	U	ug/L	P415828	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: 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: P415909

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415901

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416148

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416151

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415992

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416110

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416403

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416485

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: P416023

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

Reference Method: EPA 8321B
Batch ID: P415828

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: EPA 8321B
Batch ID: P415853

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: P416070

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P416073

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P416222

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P416224

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416189

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416191

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P416338

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416028

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: P415909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.4		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415901

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416151

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415992

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416110

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416403

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: P416485

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: P416023

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

Reference Method: EPA 8321B

Batch ID: P415828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	52.9		P	40 - 150
2,4,5-T	44.6		P	40 - 150
Acetaminophen	83.1		P	30 - 150
Acetamiprid	78.4		P	40 - 150
Afidopyropen	45.0		P	30 - 150
Bentazon	70.8		P	30 - 150
Benzovindiflupyr	87.2		P	40 - 150
Carbamazepine	83.5		P	40 - 150
Clothianidin	89.4		P	40 - 150
Dinotefuran	90.8		P	40 - 150
Diuron	66.8		P	40 - 150
Fenuron	90.2		P	40 - 150
Fluridone	80.6		P	40 - 150
Hydrocodone	81.9		P	40 - 150
Ibuprofen	60.5		P	40 - 150
Imazapyr	88.0		P	40 - 150
Imidacloprid	87.9		P	40 - 150
Linuron	66.8		P	40 - 150
Mandestrobin	72.4		P	40 - 150
MCPP	69.4		P	40 - 150
Naproxen	42.9		P	40 - 150
Primidone	92.2		P	40 - 150
Pyraclostrobin	72.5		P	40 - 150
Silvex	42.7		P	40 - 150
Thiamethoxam	83.8		P	40 - 150
Tolfenpyrad	43.0		P	30 - 150
Triclopyr	51.2		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P415853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.8		P	40 - 150
AMPA	102		P	40 - 150
Endothall	94.6		P	40 - 150
Glufosinate	95.1		P	40 - 150
Glyphosate	102		P	40 - 150
Sucralose	98.5		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P416070

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P416073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P416338

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

Reference Method: SM 5310 B-2011
Batch ID: P416028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337487	Chloride	98.8		P	90 - 110
2337511	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337487	Sulfate	93.5		P	90 - 110
2337511	Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336974	Ammonia-N	98.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337335	Kjeldahl Nitrogen	103	95.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337378	Kjeldahl Nitrogen	112	114	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337338	NO2NO3-N	104	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337375	NO2NO3-N	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337375	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P415828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336740	2,4-D	50.1	66.5	P/P	40 - 150
2336740	2,4,5-T	39.2	39.5	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P415828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336740	Acetaminophen	92.2	98.3	P/P	30 - 150
2336740	Acetamiprid	69.3	82.3	P/P	40 - 150
2336740	Afidopyropen	50.1	63.1	P/P	30 - 150
2336740	Bentazon	47.7	47.0	P/P	30 - 150
2336740	Benzovindiflupyr	84.4	89.3	P/P	40 - 150
2336740	Carbamazepine	79.4	85.7	P/P	40 - 150
2336740	Clothianidin	96.5	111	P/P	40 - 150
2336740	Dinotefuran	120	133	P/P	40 - 150
2336740	Diuron	58.7	56.6	P/P	40 - 150
2336740	Fenuron	79.6	89.6	P/P	40 - 150
2336740	Fluridone	68.0	79.9	P/P	40 - 150
2336740	Hydrocodone	90.6	95.8	P/P	40 - 150
2336740	Ibuprofen	72.4	67.9	P/P	40 - 150
2336740	Imazapyr	73.0	79.6	P/P	40 - 150
2336740	Imidacloprid	121	127	P/P	40 - 150
2336740	Linuron	68.2	77.1	P/P	40 - 150
2336740	Mandestrobin	68.2	75.2	P/P	40 - 150
2336740	MCPP	63.8	69.1	P/P	40 - 150
2336740	Naproxen	51.3	60.8	P/P	40 - 150
2336740	Primidone	94.7	110	P/P	40 - 150
2336740	Pyraclostrobin	74.5	82.8	P/P	40 - 150
2336740	Silvex	49.3	47.4	P/P	40 - 150
2336740	Thiamethoxam	115	127	P/P	40 - 150
2336740	Tolfenpyrad	44.9	46.7	P/P	30 - 150
2336740	Triclopyr	48.1	50.0	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P415853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337358	Acesulfame K	101	101	P/P	40 - 150
2337358	AMPA	95.0	97.0	P/P	40 - 150
2337358	Endothall	96.0	96.6	P/P	40 - 150
2337358	Glufosinate	87.6	85.2	P/P	40 - 150
2337358	Glyphosate	78.8	84.4	P/P	40 - 150
2337358	Sucralose	101	101	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P416338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337539	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P416028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337500	Organic Carbon	99.4	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337398	Color (true)	0.473	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337328	Turbidity	5.22	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337487	Chloride	0.167	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337487	Sulfate	0.0716	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336974	Ammonia-N	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337335	Kjeldahl Nitrogen	6.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337378	Kjeldahl Nitrogen	1.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337338	NO2NO3-N	1.90	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P416485

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337375	NO2NO3-N	1.91	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P416023

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337375	Total-P	1.03	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P415828

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336740	2,4-D	24.9	Spike	P	0 - 30
2336740	2,4,5-T	0.782	Spike	P	0 - 30
2336740	Acetaminophen	6.40	Spike	P	0 - 30
2336740	Acetamiprid	17.2	Spike	P	0 - 30
2336740	Afidopyropen	23.0	Spike	P	0 - 30
2336740	Bentazon	1.60	Spike	P	0 - 30
2336740	Benzovindiflupyr	5.59	Spike	P	0 - 30
2336740	Carbamazepine	7.66	Spike	P	0 - 30
2336740	Clothianidin	13.6	Spike	P	0 - 30
2336740	Dinotefuran	10.5	Spike	P	0 - 30
2336740	Diuron	3.77	Spike	P	0 - 30
2336740	Fenuron	11.8	Spike	P	0 - 30
2336740	Fluridone	16.0	Spike	P	0 - 30
2336740	Hydrocodone	5.66	Spike	P	0 - 30
2336740	Ibuprofen	6.46	Spike	P	0 - 30
2336740	Imazapyr	8.65	Spike	P	0 - 30
2336740	Imidacloprid	4.87	Spike	P	0 - 30
2336740	Linuron	12.3	Spike	P	0 - 30
2336740	Mandestrobin	9.76	Spike	P	0 - 30
2336740	MCPP	7.99	Spike	P	0 - 30
2336740	Naproxen	16.9	Spike	P	0 - 30
2336740	Primidone	14.9	Spike	P	0 - 30
2336740	Pyraclostrobin	10.5	Spike	P	0 - 30
2336740	Silvex	3.94	Spike	P	0 - 30
2336740	Thiamethoxam	10.0	Spike	P	0 - 30
2336740	Tolfenpyrad	3.87	Spike	P	0 - 30
2336740	Triclopyr	3.81	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P415853

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337358	Acesulfame K	0.243	Spike	P	0 - 30
2337358	AMPA	2.06	Spike	P	0 - 30
2337358	Endothall	0.564	Spike	P	0 - 30
2337358	Glufosinate	2.77	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P415853

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337358	Glyphosate	6.86	Spike	P	0 - 30
2337358	Sucralose	0.137	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P416070

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337511	Total Alkalinity	0.617	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011

Batch ID: P416073

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337487	Total Alkalinity	1.11	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011

Batch ID: P416222

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	TDS	7.52	Sample	P	0 - 10

Reference Method: SM 2540 C-2011

Batch ID: P416224

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337006	TDS	3.58	Sample	P	0 - 10

Reference Method: SM 2540 D-2011

Batch ID: P416189

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	TSS	2.90	Spike	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P416338

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337539	Fluoride	0.480	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P416028

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337500	Organic Carbon	0.192	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2337386

Field Sample ID: G3TLHR0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	69.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.3	P	30 - 160
EPA 8321B	Diuron-d6	61.4	P	30 - 160
EPA 8321B	Endothall-d6	90.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.7	P	30 - 160
EPA 8321B	Primidone-d5	120	P	30 - 160
EPA 8321B	Sucralose-d6	93.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113141

Included Lab Sample IDs: 2337373, 2337374, 2337377

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

Reference Method: DEP SOP: NU-094-1

Run ID: A113145

Included Lab Sample IDs: 2337373, 2337374, 2337377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.2	98.3	P/P	85 - 115
Color (true)	99.7	101	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A113155

Included Lab Sample IDs: 2337386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	95.6	P/P	50 - 150
2,4,5-T	92.8	97.3	P/P	50 - 150
Acetaminophen	106	104	P/P	60 - 160
Acetamiprid	103	106	P/P	50 - 150
Afidopyropen	92.8	105	P/P	50 - 150
Bentazon	101	112	P/P	50 - 160
Benzovindiflupyr	102	104	P/P	50 - 150
Carbamazepine	109	106	P/P	60 - 150
Clothianidin	104	97.8	P/P	60 - 150
Dinotefuran	103	109	P/P	50 - 150
Diuron	69.3	95.4	P/P	60 - 160
Fenuron	98.8	98.6	P/P	60 - 150
Fluridone	115	104	P/P	60 - 160
Hydrocodone	97.6	106	P/P	60 - 150
Ibuprofen	88.3	120	P/P	50 - 160
Imazapyr	84.9	83.4	P/P	50 - 150
Imidacloprid	91.8	95.7	P/P	60 - 150
Linuron	106	90.3	P/P	60 - 150
Mandestrobin	102	101	P/P	50 - 150
MCPP	109	112	P/P	50 - 150
Naproxen	120	118	P/P	50 - 160
Primidone	106	104	P/P	60 - 150
Pyraclostrobin	104	102	P/P	60 - 150
Silvex	88.4	82.9	P/P	50 - 150
Thiamethoxam	101	101	P/P	50 - 150
Tolfenpyrad	99.6	96.0	P/P	60 - 150
Triclopyr	98.5	111	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113156

Included Lab Sample IDs: 2337373, 2337374, 2337377

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113171

Included Lab Sample IDs: 2337375, 2337376, 2337378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.5	97.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113181

Included Lab Sample IDs: 2337386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	103	P/P	60 - 160
Sucralose	101	102	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113183

Included Lab Sample IDs: 2337386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	104	P/P	60 - 160
Endothall	97.4	93.9	P/P	60 - 160
Glufosinate	75.8	77.3	P/P	60 - 160
Glyphosate	98.6	99.3	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A113196

Included Lab Sample IDs: 2337375, 2337376, 2337378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A113225

Included Lab Sample IDs: 2337373, 2337374, 2337377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113239

Included Lab Sample IDs: 2337375, 2337376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	92.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113282

Included Lab Sample IDs: 2337375, 2337376, 2337378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	98.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113333

Included Lab Sample IDs: 2337378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.0	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113368

Included Lab Sample IDs: 2337373, 2337374, 2337377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	103	P/P	90 - 110
Fluoride	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113410

Included Lab Sample IDs: 2337378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113433

Included Lab Sample IDs: 2337375, 2337376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	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)	97.4				0.473	
EPA 180.1 Rev. 2.0	Turbidity	97.1				5.22	
EPA 300.0 Rev. 2.1	Chloride	99.5	98.8	99.5		0.167	
	Sulfate	99.4	93.5	96.6		0.0716	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.6	101			2.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.2	103	95.9			6.52
	Kjeldahl Nitrogen	109	112	114			1.03
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	107			1.90
	NO2NO3-N	102	103	106			1.91
EPA 365.1 Rev. 2.0	Total-P	103	103	104			1.03
EPA 8321B	2,4-D	52.9	50.1	66.5			24.9
	2,4,5-T	44.6	39.2	39.5			0.782
	Acesulfame K	98.8	101	101			0.243
	Acetaminophen	83.1	92.2	98.3			6.40
	Acetamiprid	78.4	69.3	82.3			17.2
	Afidopyropen	45.0	50.1	63.1			23.0
	AMPA	102	95.0	97.0			2.06
	Bentazon	70.8	47.7	47.0			1.60
	Benzovindiflupyr	87.2	84.4	89.3			5.59
	Carbamazepine	83.5	79.4	85.7			7.66
	Clothianidin	89.4	96.5	111			13.6
	Dinotefuran	90.8	120	133			10.5
	Diuron	66.8	58.7	56.6			3.77
	Endothall	94.6	96.0	96.6			0.564
	Fenuron	90.2	79.6	89.6			11.8
	Fluridone	80.6	68.0	79.9			16.0
	Glufosinate	95.1	87.6	85.2			2.77
	Glyphosate	102	78.8	84.4			6.86
	Hydrocodone	81.9	90.6	95.8			5.66
	Ibuprofen	60.5	72.4	67.9			6.46
	Imazapyr	88.0	73.0	79.6			8.65
	Imidacloprid	87.9	121	127			4.87
	Linuron	66.8	68.2	77.1			12.3
	Mandestrobin	72.4	68.2	75.2			9.76
	MCPP	69.4	63.8	69.1			7.99
	Naproxen	42.9	51.3	60.8			16.9
	Primidone	92.2	94.7	110			14.9
	Pyraclostrobin	72.5	74.5	82.8			10.5
	Silvex	42.7	49.3	47.4			3.94
	Sucralose	98.5	101	101			0.137
	Thiamethoxam	83.8	115	127			10.0
	Tolfenpyrad	43.0	44.9	46.7			3.87
	Triclopyr	51.2	48.1	50.0			3.81
SM 2320 B-2011	Total Alkalinity	101				0.617	
	Total Alkalinity	100				1.11	
SM 2540 C-2011	TDS					7.52	
	TDS					3.58	
SM 2540 D-2011	TSS					2.90	
SM 4500-F- C-2011	Fluoride	103	102	101			0.480
SM 5310 B-2011	Organic Carbon	95.6	99.4	99.6			0.192

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2337373, 2337374, 2337377
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2337373, 2337374, 2337377
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2337373, 2337374, 2337377
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2337373, 2337374, 2337377
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2337375, 2337376, 2337378
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2337375, 2337376, 2337378
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2337375, 2337376, 2337378
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2337375, 2337376, 2337378
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2337386
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2337373, 2337374, 2337377
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2337373, 2337374, 2337377
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2337373, 2337374, 2337377
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2337373, 2337374, 2337377
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2337375, 2337376, 2337378

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	06/27/2022			06/28/2022 15:04	Samantha L Bates	2337373
	06/27/2022			06/28/2022 15:05	Samantha L Bates	2337374
	06/27/2022			06/28/2022 15:29	Samantha L Bates	2337377
EPA 180.1 Rev. 2.0	06/27/2022			06/28/2022 14:27	Anna M. Plaviak	2337373, 2337374
	06/27/2022			06/28/2022 14:29	Anna M. Plaviak	2337377
EPA 300.0 Rev. 2.1	06/27/2022			07/01/2022 22:15	Anna M. Plaviak	2337373
	06/27/2022			07/01/2022 22:27	Anna M. Plaviak	2337374
	06/27/2022			07/01/2022 22:39	Anna M. Plaviak	2337377
EPA 350.1 Rev. 2.0	06/27/2022			06/29/2022 15:46	Judith K. Clark	2337375
	06/27/2022			06/29/2022 15:47	Judith K. Clark	2337376
	06/27/2022			06/29/2022 15:49	Judith K. Clark	2337378
EPA 351.2 Rev. 2.0	06/27/2022	06/30/2022 14:06	Samantha L Bates	07/01/2022 13:10	Alexandra J Mattheus	2337375
	06/27/2022	06/30/2022 14:06	Samantha L Bates	07/01/2022 13:12	Alexandra J Mattheus	2337376
	06/27/2022	07/05/2022 14:05	Simonne.V. Calhoun	07/07/2022 12:10	Alexandra J Mattheus	2337378
EPA 353.2 Rev. 2.0	06/27/2022			07/08/2022 16:24	Touraj Touran	2337378
	06/27/2022			07/12/2022 12:17	Judith K. Clark	2337375
	06/27/2022			07/12/2022 12:23	Judith K. Clark	2337376
EPA 365.1 Rev. 2.0	06/27/2022	07/01/2022 16:41	Simonne.V. Calhoun	07/05/2022 16:08	James L Waggeberby	2337375
	06/27/2022	07/01/2022 16:41	Simonne.V. Calhoun	07/05/2022 16:18	James L Waggeberby	2337376
	06/27/2022	07/01/2022 16:41	Simonne.V. Calhoun	07/05/2022 16:19	James L Waggeberby	2337378
EPA 8321B	06/27/2022	06/28/2022 09:30	June Rhew	06/29/2022 03:43	Juyoung Kim	2337386
	06/27/2022	06/29/2022 11:30	Umesh Chiluwal	06/29/2022 15:45	Umesh Chiluwal	2337386
	06/27/2022	06/29/2022 11:30	Umesh Chiluwal	06/30/2022 02:35	Umesh Chiluwal	2337386
SM 2320 B-2011	06/27/2022			06/29/2022 19:35	Dale L. Simmons	2337373
	06/27/2022			06/29/2022 19:45	Dale L. Simmons	2337374
	06/27/2022			06/29/2022 21:06	Dale L. Simmons	2337377
SM 2540 C-2011	06/27/2022			06/28/2022 16:31	Yijie Li	2337373, 2337374, 2337377
SM 2540 D-2011	06/27/2022			06/28/2022 16:31	Yijie Li	2337373, 2337374, 2337377
SM 4500-F- C-2011	06/27/2022			07/08/2022 00:24	Dale L. Simmons	2337373
	06/27/2022			07/08/2022 00:30	Dale L. Simmons	2337374
	06/27/2022			07/08/2022 00:50	Dale L. Simmons	2337377
SM 5310 B-2011	06/27/2022			06/29/2022 17:51	Khloe J Berg	2337375
	06/27/2022			06/29/2022 18:04	Khloe J Berg	2337376
	06/27/2022			06/29/2022 18:18	Khloe J Berg	2337378