

Chemical Analysis Report

TLH-ROC-2022-07-18-01

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

Event Description: **Run 13**
Request ID: **RQ-2022-07-18-46**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 03-AUG-2022 11:30



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: Bayou George upstream John Pitts Rd

Collection Date/Time: 07/18/2022 11:40

Field ID: G3TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342105	DEP SOP: NU-094-1	Color (true)	310		PCU	P416852	
	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P416869	
	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P417207	
		Sulfate	1.2		mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	2.2	I	mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	74		mg/L	P417297	
	SM 2540 D-2011	TSS	4	I	mg/L	P417286	
2342106	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P417087	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P417192	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P417155	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P416950	
2342112	EPA 8321B	SM 5310 B-2011	Organic Carbon	26	mg C/L	P417157	
		2,4-D	0.0020	U	ug/L	P416789	
		Acesulfame K	0.10	U	ug/L	P416713	
		2,4,5-T	0.0040	U	ug/L	P416789	
		AMPA	0.10	U	ug/L	P416713	
		Acetaminophen	0.0080	U	ug/L	P416789	
		Acetamiprid	0.0020	U	ug/L	P416789	
		Endothall	0.25	UJ	ug/L	P416713	MS
		Glufosinate	0.10	U	ug/L	P416713	
		Glyphosate	0.10	U	ug/L	P416713	
		Afidopyropen	0.0020	U	ug/L	P416789	
		Bentazon	8.0E-04	U	ug/L	P416789	
		Sucralose	0.016	I	ug/L	P416713	
		Benzovindiflupyr	0.0020	U	ug/L	P416789	
		Carbamazepine	8.0E-04	U	ug/L	P416789	
		Clothianidin	0.0020	U	ug/L	P416789	
		Dinotefuran	0.0020	U	ug/L	P416789	
		Diuron	0.0020	U	ug/L	P416789	
		Fenuron	0.032	U	ug/L	P416789	
		Fluridone	8.0E-04	U	ug/L	P416789	
		Imazapyr	0.059		ug/L	P416789	
		Hydrocodone	0.0020	U	ug/L	P416789	
		Ibuprofen	0.080	U	ug/L	P416789	
		Imidacloprid	0.0020	U	ug/L	P416789	MS
		Linuron	0.0040	U	ug/L	P416789	
		Mandestrobin	0.0020	U	ug/L	P416789	
		MCP	0.0040	U	ug/L	P416789	
		Naproxen	0.0080	U	ug/L	P416789	
		Primidone	0.0040	U	ug/L	P416789	
		Pyraclostrobin	0.0020	U	ug/L	P416789	
		Silvex	0.0040	U	ug/L	P416789	
		Thiamethoxam	0.0020	U	ug/L	P416789	

Field ID: G3TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342112	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P416789	
		Triclopyr	0.0040	U	ug/L	P416789	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Williford Spring

Collection Date/Time: 07/18/2022 10:45

Field ID: G3TLHR0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342102	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P416852	
	EPA 180.1 Rev. 2.0	Turbidity	0.15	I	NTU	P416869	
	EPA 300.0 Rev. 2.1	Chloride	2.7		mg Cl/L	P417207	
		Sulfate	1.4		mg SO4/L	P417210	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P417081	
	SM 2540 C-2011	TDS	74		mg/L	P417297	
	SM 2540 D-2011	TSS	2	U	mg/L	P417286	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P417087	
2342103	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417192	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.11	I	mg N/L	P416991	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P417224	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P416950	
	SM 5310 B-2011	Organic Carbon	0.60	I	mg C/L	P417157	

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P416852

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416869

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416991

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P416713

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: P416789

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: P417081

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

Reference Method: SM 2540 C-2011

Batch ID: P417297

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P417286

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417157

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: P416852

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416869

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416991

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417155

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: P417224

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P416713

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	80.2		P	40 - 150
AMPA	112		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	128		P	40 - 150
Glyphosate	103		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P416789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 150
2,4,5-T	94.6		P	40 - 150
Acetaminophen	95.0		P	30 - 150
Acetamiprid	103		P	40 - 150
Afidopyropen	73.9		P	30 - 150
Bentazon	116		P	30 - 150
Benzovindiflupyr	96.4		P	40 - 150
Carbamazepine	95.8		P	40 - 150
Clothianidin	102		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	88.1		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	98.4		P	40 - 150
Ibuprofen	89.9		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	141		P	40 - 150
Linuron	96.5		P	40 - 150
Mandestrobin	95.9		P	40 - 150
MCPP	110		P	40 - 150
Naproxen	72.7		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	86.4		P	40 - 150
Silvex	88.4		P	40 - 150
Thiamethoxam	98.5		P	40 - 150
Tolfenpyrad	57.9		P	30 - 150
Triclopyr	105		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P417081

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

Reference Method: SM 4500-F- C-2011

Batch ID: P417087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P417157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342089	Chloride	95.5		P	90 - 110
2342115	Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342089	Sulfate	94.1		P	90 - 110
2342115	Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342103	Ammonia-N	97.4	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342214	Kjeldahl Nitrogen	94.1	94.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342090	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342091	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342112	Acesulfame K	67.2	64.6	P/P	40 - 150
2342112	AMPA	87.5	88.8	P/P	40 - 150
2342112	Endothall	158	148	F/P	40 - 150
2342112	Glufosinate	84.7	85.2	P/P	40 - 150
2342112	Glyphosate	88.0	81.5	P/P	40 - 150
2342112	Sucralose	98.9	96.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P416789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341960	2,4,5-T	94.1	77.6	P/P	40 - 150
2341960	Acetaminophen	116	110	P/P	30 - 150
2341960	Acetamiprid	89.2	83.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P416789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341960	Afidopyropen	85.7	83.8	P/P	30 - 150
2341960	Bentazon	105	92.6	P/P	30 - 150
2341960	Benzovindiflupyr	93.6	87.0	P/P	40 - 150
2341960	Carbamazepine	99.7	92.9	P/P	40 - 150
2341960	Clothianidin	121	110	P/P	40 - 150
2341960	Dinotefuran	137	136	P/P	40 - 150
2341960	Diuron	77.3	69.4	P/P	40 - 150
2341960	Fenuron	97.3	89.4	P/P	40 - 150
2341960	Fluridone	102	104	P/P	40 - 150
2341960	Hydrocodone	104	104	P/P	40 - 150
2341960	Ibuprofen	84.4	82.3	P/P	40 - 150
2341960	Imazapyr	103	94.7	P/P	40 - 150
2341960	Imidacloprid	150	141	F/P	40 - 150
2341960	Linuron	86.5	88.8	P/P	40 - 150
2341960	Mandestrobin	90.1	85.5	P/P	40 - 150
2341960	MCCP	110	103	P/P	40 - 150
2341960	Naproxen	86.7	78.6	P/P	40 - 150
2341960	Primidone	120	115	P/P	40 - 150
2341960	Pyraclostrobin	87.1	84.5	P/P	40 - 150
2341960	Silvex	91.9	80.7	P/P	40 - 150
2341960	Thiamethoxam	133	126	P/P	40 - 150
2341960	Tolfenpyrad	58.2	57.2	P/P	30 - 150
2341960	Triclopyr	96.7	89.0	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P417087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342086	Fluoride	101	100	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P417157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342121	Organic Carbon	98.2	97.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342119	Color (true)	2.50	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342105	Turbidity	2.29	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342089	Chloride	0.136	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342089	Sulfate	0.173	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342103	Ammonia-N	0.205	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342669	Kjeldahl Nitrogen	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342214	Kjeldahl Nitrogen	0.313	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342090	NO2NO3-N	0.990	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P416950

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342091	Total-P	1.84	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P416713

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342112	Acesulfame K	4.01	Spike	P	0 - 30
2342112	AMPA	1.43	Spike	P	0 - 30
2342112	Endothall	7.17	Spike	P	0 - 30
2342112	Glufosinate	0.539	Spike	P	0 - 30
2342112	Glyphosate	7.69	Spike	P	0 - 30
2342112	Sucralose	2.96	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P416789

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341960	2,4-D	9.74	Spike	P	0 - 30
2341960	2,4,5-T	19.2	Spike	P	0 - 30
2341960	Acetaminophen	5.68	Spike	P	0 - 30
2341960	Acetamiprid	6.36	Spike	P	0 - 30
2341960	Afidopyropen	2.21	Spike	P	0 - 30
2341960	Bentazon	9.87	Spike	P	0 - 30
2341960	Benzovindiflupyr	7.34	Spike	P	0 - 30
2341960	Carbamazepine	7.03	Spike	P	0 - 30
2341960	Clothianidin	9.52	Spike	P	0 - 30
2341960	Dinotefuran	1.19	Spike	P	0 - 30
2341960	Diuron	10.8	Spike	P	0 - 30
2341960	Fenuron	8.47	Spike	P	0 - 30
2341960	Fluridone	1.05	Spike	P	0 - 30
2341960	Hydrocodone	0.319	Spike	P	0 - 30
2341960	Ibuprofen	2.57	Spike	P	0 - 30
2341960	Imazapyr	7.78	Spike	P	0 - 30
2341960	Imidacloprid	6.37	Spike	P	0 - 30
2341960	Linuron	2.69	Spike	P	0 - 30
2341960	Mandestrobin	5.27	Spike	P	0 - 30
2341960	MCP	6.98	Spike	P	0 - 30
2341960	Naproxen	9.78	Spike	P	0 - 30
2341960	Primidone	4.39	Spike	P	0 - 30
2341960	Pyraclostrobin	3.07	Spike	P	0 - 30
2341960	Silvex	13.1	Spike	P	0 - 30
2341960	Thiamethoxam	5.47	Spike	P	0 - 30
2341960	Tolfenpyrad	1.80	Spike	P	0 - 30
2341960	Triclopyr	8.32	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P417081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Total Alkalinity	1.82	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P417297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342174	TDS	6.74	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342086	Fluoride	0.476	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342121	Organic Carbon	0.491	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2342112

Field Sample ID: G3TLHR0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.6	P	30 - 160
EPA 8321B	Diuron-d6	68.7	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	74.6	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	97.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A113584

Included Lab Sample IDs: 2342102, 2342105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	105	P/P	90 - 110
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113588

Included Lab Sample IDs: 2342102, 2342105

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

Reference Method: EPA 8321B

Run ID: A113640

Included Lab Sample IDs: 2342112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	82.7	81.8	P/P	60 - 160
Sucralose	98.1	98.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113642

Included Lab Sample IDs: 2342112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	108	P/P	60 - 160
Endothall	104	100	P/P	60 - 160
Glufosinate	100	97.1	P/P	60 - 160
Glyphosate	102	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113656

Included Lab Sample IDs: 2342112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.9	90.7	P/P	50 - 150
2,4,5-T	94.2	98.5	P/P	50 - 150
Acetaminophen	98.5	96.0	P/P	60 - 160
Acetamiprid	96.0	96.8	P/P	50 - 150
Afidopyropen	110	84.7	P/P	50 - 150
Bentazon	118	125	P/P	50 - 160
Benzovindiflupyr	109	102	P/P	50 - 150
Carbamazepine	97.3	94.1	P/P	60 - 150
Clothianidin	93.3	104	P/P	60 - 150
Dinotefuran	100	96.3	P/P	50 - 150
Diuron	108	86.3	P/P	60 - 160
Fenuron	93.0	97.0	P/P	60 - 150
Fluridone	113	107	P/P	60 - 160
Hydrocodone	102	98.1	P/P	60 - 150
Ibuprofen	79.8	78.2	P/P	50 - 160
Imazapyr	94.5	86.8	P/P	50 - 150
Imidacloprid	92.0	93.8	P/P	60 - 150
Linuron	108	88.4	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113656
Included Lab Sample IDs: 2342112

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	98.3	101	P/P	50 - 150
MCPD	98.8	88.0	P/P	50 - 150
Naproxen	108	121	P/P	50 - 160
Primidone	95.8	97.2	P/P	60 - 150
Pyraclostrobin	97.5	97.1	P/P	60 - 150
Silvex	88.1	79.4	P/P	50 - 150
Thiamethoxam	97.2	102	P/P	50 - 150
Tolfenpyrad	101	95.5	P/P	60 - 150
Triclopyr	94.2	94.9	P/P	50 - 150

Reference Method: SM 2320 B-2011
Run ID: A113683
Included Lab Sample IDs: 2342102, 2342105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	99.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113683
Included Lab Sample IDs: 2342102, 2342105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113693
Included Lab Sample IDs: 2342103, 2342106

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

Reference Method: SM 5310 B-2011
Run ID: A113703
Included Lab Sample IDs: 2342103, 2342106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	97.7	P/P	90 - 110
Organic Carbon	98.9	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113714
Included Lab Sample IDs: 2342103, 2342106

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113720
Included Lab Sample IDs: 2342103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113720

Included Lab Sample IDs: 2342103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113721

Included Lab Sample IDs: 2342102, 2342105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.9	P/P	90 - 110
Sulfate	97.8	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113726

Included Lab Sample IDs: 2342103, 2342106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113731

Included Lab Sample IDs: 2342106

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	97.6	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		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	101			2.50	
EPA 180.1 Rev. 2.0	Turbidity	97.0			2.29	
EPA 300.0 Rev. 2.1	Chloride	98.0	95.5	93.7	0.136	
	Sulfate	97.4	94.1	93.6	0.173	
EPA 350.1 Rev. 2.0	Ammonia-N	95.4	97.4	97.6		0.205
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110				1.28
	Kjeldahl Nitrogen	101	94.1	94.7		0.313
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102		0.990
EPA 365.1 Rev. 2.0	Total-P	99.8	103	101		1.84
EPA 8321B	2,4-D	111				9.74
	2,4,5-T	94.6	94.1	77.6		19.2
	Acesulfame K	80.2	67.2	64.6		4.01
	Acetaminophen	95.0	116	110		5.68
	Acetamiprid	103	89.2	83.7		6.36
	Afidopyropen	73.9	85.7	83.8		2.21
	AMPA	112	87.5	88.8		1.43
	Bentazon	116	105	92.6		9.87
	Benzovindiflupyr	96.4	93.6	87.0		7.34
	Carbamazepine	95.8	99.7	92.9		7.03
	Clothianidin	102	121	110		9.52
	Dinotefuran	101	137	136		1.19
	Diuron	88.1	77.3	69.4		10.8
	Endothall	102	158	148		7.17
	Fenuron	108	97.3	89.4		8.47
	Fluridone	102	102	104		1.05
	Glufosinate	128	84.7	85.2		0.539
	Glyphosate	103	88.0	81.5		7.69
	Hydrocodone	98.4	104	104		0.319
	Ibuprofen	89.9	84.4	82.3		2.57
	Imazapyr	103	103	94.7		7.78
	Imidacloprid	141	150	141		6.37
	Linuron	96.5	86.5	88.8		2.69
	Mandestrobin	95.9	90.1	85.5		5.27
	MCPP	110	110	103		6.98
	Naproxen	72.7	86.7	78.6		9.78
	Primidone	106	120	115		4.39
	Pyraclostrobin	86.4	87.1	84.5		3.07
	Silvex	88.4	91.9	80.7		13.1
	Sucralose	102	98.9	96.0		2.96
	Thiamethoxam	98.5	133	126		5.47
	Tolfenpyrad	57.9	58.2	57.2		1.80
	Triclopyr	105	96.7	89.0		8.32
SM 2320 B-2011	Total Alkalinity	101			1.82	
SM 2540 C-2011	TDS				6.74	
SM 4500-F- C-2011	Fluoride	101	101	100		0.476
SM 5310 B-2011	Organic Carbon	99.8	98.2	97.6		0.491

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2342102, 2342105
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2342102, 2342105
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2342102, 2342105

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2342102, 2342105
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2342103, 2342106
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2342103, 2342106
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2342103, 2342106
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2342103, 2342106
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2342112
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2342102, 2342105
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2342102, 2342105
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2342102, 2342105
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2342102, 2342105
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2342103, 2342106

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	07/18/2022			07/19/2022 14:26	Samantha L Bates	2342102
	07/18/2022			07/19/2022 14:54	Samantha L Bates	2342105
EPA 180.1 Rev. 2.0	07/18/2022			07/19/2022 13:25	Anna M. Plaviak	2342102
	07/18/2022			07/19/2022 13:26	Anna M. Plaviak	2342105
EPA 300.0 Rev. 2.1	07/18/2022			07/26/2022 13:28	Anna M. Plaviak	2342102
	07/18/2022			07/26/2022 13:40	Anna M. Plaviak	2342105
EPA 350.1 Rev. 2.0	07/18/2022			07/26/2022 15:36	Judith K. Clark	2342103
	07/18/2022			07/26/2022 15:44	Judith K. Clark	2342106
EPA 351.2 Rev. 2.0	07/18/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 15:29	Samantha L Bates	2342103
	07/18/2022	07/26/2022 11:30	Simonne.V. Calhoun	07/27/2022 11:59	Samantha L Bates	2342106
EPA 353.2 Rev. 2.0	07/18/2022			07/27/2022 09:41	Beverly Y. Sanders	2342103
	07/18/2022			07/27/2022 09:42	Beverly Y. Sanders	2342106
EPA 365.1 Rev. 2.0	07/18/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:21	James L Waggeberby	2342103
	07/18/2022	07/22/2022 16:03	Adam P Silver	07/25/2022 15:22	James L Waggeberby	2342106
EPA 8321B	07/18/2022	07/19/2022 09:00	June Rhew	07/22/2022 04:18	Juyoung Kim	2342112
	07/18/2022	07/20/2022 14:30	Umesh Chiluwai	07/20/2022 16:43	Umesh Chiluwai	2342112
	07/18/2022	07/20/2022 14:30	Umesh Chiluwai	07/21/2022 01:49	Umesh Chiluwai	2342112
SM 2320 B-2011	07/18/2022			07/23/2022 09:48	Dale L. Simmons	2342102
	07/18/2022			07/23/2022 09:58	Dale L. Simmons	2342105
SM 2540 C-2011	07/18/2022			07/22/2022 15:32	Yijie Li	2342102, 2342105
SM 2540 D-2011	07/18/2022			07/22/2022 15:32	Yijie Li	2342102, 2342105
SM 4500-F- C-2011	07/18/2022			07/23/2022 09:48	Dale L. Simmons	2342102
	07/18/2022			07/23/2022 09:58	Dale L. Simmons	2342105
SM 5310 B-2011	07/18/2022			07/22/2022 22:27	Touraj Touran	2342103
	07/18/2022			07/22/2022 23:11	Touraj Touran	2342106