

Chemical Analysis Report

CEN-DIST-2023-12-05-02

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

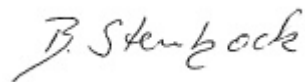
Event Description: **Tiger Lake Inlet**
Request ID: **RQ-2023-12-04-35**
Customer: **CEN-DIST**
Project ID: **TMDL**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 27-DEC-2023 10:48



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: Tiger Lake Inlet at Sam Keen Rd

Collection Date/Time: 12/04/2023 12:43

Field ID: G4CE0248

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2454289	DEP SOP: NU-094-1	Color (true)	86	A	PCU	P438520	
	EPA 180.1 Rev. 2.0	Turbidity	39		NTU	P438522	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P438811	
		Sulfate	31		mg SO4/L	P438815	
	SM 2320 B-2011	Total Alkalinity	106		mg CaCO3/L	P438936	
	SM 2540 C-2015	TDS	257	A	mg/L	P439143	
	SM 2540 D-2015	TSS	19	A	mg/L	P439129	
2454290	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P438938	
	EPA 350.1 Rev. 2.0	Ammonia-N	2.9		mg N/L	P438573	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.9		mg N/L	P438527	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P438675	
	EPA 365.1 Rev. 2.0	Total-P	5.9		mg P/L	P439251	
2454294	SM 5310 B-2011	Organic Carbon	20		mg C/L	P438604	
	EPA 8321B	2,4-D	0.0047	I	ug/L	P438413	
		Acesulfame K	0.10	U	ug/L	P438435	
		2,4,5-T	0.0040	U	ug/L	P438413	
		AMPA	5.8		ug/L	P438435	
		Acetaminophen	0.026	I	ug/L	P438413	
		Acetamiprid	0.0020	U	ug/L	P438413	
		Endothall	0.25	U	ug/L	P438435	
		Glufosinate	0.10	U	ug/L	P438435	
		Glyphosate	4.9		ug/L	P438435	
		Afidopyropen	0.0020	U	ug/L	P438413	
		Bentazon	8.0E-04	U	ug/L	P438413	
		Sucralose	0.10		ug/L	P438435	
		Benzovindiflupyr	0.0020	U	ug/L	P438413	
		Carbamazepine	8.0E-04	U	ug/L	P438413	
		Clothianidin	0.0020	U	ug/L	P438413	
		Dinotefuran	0.0020	U	ug/L	P438413	
		Diuron	0.010		ug/L	P438413	
		Fenuron	0.032	U	ug/L	P438413	
		Fluridone	8.0E-04	U	ug/L	P438413	
		Imazapyr	0.047		ug/L	P438413	
		Hydrocodone	0.0020	U	ug/L	P438413	
		Ibuprofen	0.080	U	ug/L	P438413	
		Imidacloprid	0.020		ug/L	P438413	
		Linuron	0.0040	U	ug/L	P438413	
		Mandestrobin	0.0020	U	ug/L	P438413	
		MCP	0.0020	U	ug/L	P438413	
		Naproxen	0.0080	U	ug/L	P438413	
		Primidone	0.0040	U	ug/L	P438413	
		Pyraclostrobin	0.0020	U	ug/L	P438413	
		Silvex	0.0040	U	ug/L	P438413	
		Thiamethoxam	0.0020	U	ug/L	P438413	

Field ID: G4CE0248

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2454294	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P438413	
		Triclopyr	0.0040	U	ug/L	P438413	

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438520

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438522

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438811

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438815

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438573

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438527

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438675

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439251

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

Reference Method: EPA 8321B
Batch ID: P438413

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P438413

Component	Result	Code	Units
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	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: P438435

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: P438936

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

Reference Method: SM 2540 C-2015

Batch ID: P439143

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P439129

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P438938

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P438604

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: P438520

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438522

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438811

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438815

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438573

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439251

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

Reference Method: EPA 8321B
Batch ID: P438413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	98.5		P	40 - 150
2,4,5-T	110		P	40 - 150
Acetaminophen	88.9		P	30 - 150
Acetamiprid	90.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P438413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Afidopyropen	83.0		P	30 - 150
Bentazon	68.3		P	30 - 150
Benzovindiflupyr	87.3		P	40 - 150
Carbamazepine	81.0		P	40 - 150
Clothianidin	88.3		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	66.3		P	40 - 150
Fenuron	99.8		P	40 - 150
Fluridone	89.9		P	40 - 150
Hydrocodone	90.0		P	40 - 150
Ibuprofen	69.6		P	40 - 150
Imazapyr	90.0		P	40 - 150
Imidacloprid	86.1		P	40 - 150
Linuron	81.7		P	40 - 150
Mandestrobin	89.3		P	40 - 150
MCPP	92.5		P	40 - 150
Naproxen	67.6		P	40 - 150
Primidone	85.0		P	40 - 150
Pyraclostrobin	79.0		P	40 - 150
Silvex	91.3		P	40 - 150
Thiamethoxam	92.5		P	40 - 150
Tolfenpyrad	46.7		P	30 - 150
Triclopyr	114		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P438435

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	134		P	40 - 150
AMPA	73.8		P	40 - 160
Endothall	114		P	40 - 160
Glufosinate	90.5		P	40 - 160
Glyphosate	87.9		P	40 - 160
Sucralose	101		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P438936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P439143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	103		P	85 - 115

Reference Method: SM 2540 D-2015

Batch ID: P439129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	106		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P438938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438604

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454505	Chloride	101		P	90 - 110
2454527	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454505	Sulfate	101		P	90 - 110
2454527	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454056	Ammonia-N	92.0	94.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454274	Kjeldahl Nitrogen	97.0	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454254	NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2455010	Total-P	106	109	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P438413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453787	2,4-D	105	80.3	P/P	40 - 150
2453787	2,4,5-T	94.1	79.0	P/P	40 - 150
2453787	Acetaminophen	106	91.7	P/P	30 - 150
2453787	Acetamiprid	77.4	67.6	P/P	40 - 150
2453787	Afidopyropen	81.6	73.4	P/P	30 - 150
2453787	Benzovindiflupyr	98.0	82.0	P/P	40 - 150
2453787	Carbamazepine	81.9	72.5	P/P	40 - 150
2453787	Clothianidin	113	98.1	P/P	40 - 150
2453787	Dinotefuran	112	95.3	P/P	40 - 150
2453787	Diuron	75.0	65.4	P/P	40 - 150
2453787	Fenuron	86.4	79.7	P/P	40 - 150
2453787	Fluridone	94.5	81.1	P/P	40 - 150
2453787	Hydrocodone	90.5	79.4	P/P	40 - 150
2453787	Ibuprofen	70.9	58.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P438413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453787	Imidacloprid	141	120	P/P	40 - 150
2453787	Linuron	82.4	68.2	P/P	40 - 150
2453787	Mandestrobin	98.8	84.8	P/P	40 - 150
2453787	MCPP	103	86.8	P/P	40 - 150
2453787	Naproxen	90.0	69.1	P/P	40 - 150
2453787	Primidone	109	94.2	P/P	40 - 150
2453787	Pyraclostrobin	91.3	79.9	P/P	40 - 150
2453787	Silvex	101	81.7	P/P	40 - 150
2453787	Thiamethoxam	101	89.0	P/P	40 - 150
2453787	Tolfenpyrad	64.4	55.4	P/P	30 - 150
2453787	Triclopyr	100	84.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453829	Acesulfame K	127	129	P/P	40 - 150
2453829	AMPA	75.3	82.9	P/P	40 - 160
2453829	Endothall	127	126	P/P	40 - 160
2453829	Glufosinate	82.1	81.9	P/P	40 - 160
2453829	Glyphosate	86.3	92.1	P/P	40 - 160
2453829	Sucralose	54.8	70.4	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P438938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454527	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454299	Organic Carbon	96.7	90.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454289	Color (true)	6.01	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454228	Turbidity	0.513	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454505	Chloride	0.377	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454505	Sulfate	0.981	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454056	Ammonia-N	1.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454274	Kjeldahl Nitrogen	4.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454254	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2455010	Total-P	2.90	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P438413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453787	2,4-D	18.8	Spike	P	0 - 30
2453787	2,4,5-T	17.4	Spike	P	0 - 30
2453787	Acetaminophen	14.6	Spike	P	0 - 30
2453787	Acetamiprid	13.5	Spike	P	0 - 30
2453787	Afidopyropen	10.7	Spike	P	0 - 30
2453787	Bentazon	13.8	Spike	P	0 - 30
2453787	Benzovindiflupyr	17.7	Spike	P	0 - 30
2453787	Carbamazepine	10.2	Spike	P	0 - 30
2453787	Clothianidin	12.1	Spike	P	0 - 30
2453787	Dinotefuran	15.9	Spike	P	0 - 30
2453787	Diuron	13.6	Spike	P	0 - 30
2453787	Fenuron	8.07	Spike	P	0 - 30
2453787	Fluridone	9.31	Spike	P	0 - 30
2453787	Hydrocodone	13.0	Spike	P	0 - 30
2453787	Ibuprofen	18.9	Spike	P	0 - 30
2453787	Imazapyr	17.3	Spike	P	0 - 30
2453787	Imidacloprid	14.4	Spike	P	0 - 30
2453787	Linuron	18.8	Spike	P	0 - 30
2453787	Mandestrobin	15.2	Spike	P	0 - 30
2453787	MCP	16.4	Spike	P	0 - 30
2453787	Naproxen	26.2	Spike	P	0 - 30
2453787	Primidone	13.6	Spike	P	0 - 30
2453787	Pyraclostrobin	13.4	Spike	P	0 - 30
2453787	Silvex	21.6	Spike	P	0 - 30
2453787	Thiamethoxam	12.7	Spike	P	0 - 30
2453787	Tolfenpyrad	15.0	Spike	P	0 - 30
2453787	Triclopyr	17.4	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P438435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453829	Acesulfame K	1.79	Spike	P	0 - 30
2453829	AMPA	9.72	Spike	P	0 - 30
2453829	Endothall	1.16	Spike	P	0 - 30
2453829	Glufosinate	0.333	Spike	P	0 - 30
2453829	Glyphosate	6.48	Spike	P	0 - 30
2453829	Sucralose	25.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P438936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454527	Total Alkalinity	0.165	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P439143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454289	TDS	3.89	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P439129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454289	TSS	8.33	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454527	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P438604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454299	Organic Carbon	5.67	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2454294
Field Sample ID: G4CE0248

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	62.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	45.4	P	30 - 160
EPA 8321B	Diuron-d6	42.2	P	30 - 160
EPA 8321B	Endothall-d6	97.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.3	P	30 - 160
EPA 8321B	Primidone-d5	62.4	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A123032

Included Lab Sample IDs: 2454289

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A123033

Included Lab Sample IDs: 2454289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A123035

Included Lab Sample IDs: 2454294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	160	156	P/P	60 - 160
Sucralose	119	116	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A123037

Included Lab Sample IDs: 2454294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.7	85.8	P/P	60 - 160
Endothall	120	103	P/P	60 - 160
Glufosinate	86.9	84.9	P/P	60 - 160
Glyphosate	95.7	91.9	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123057

Included Lab Sample IDs: 2454290

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

Reference Method: SM 5310 B-2011

Run ID: A123065

Included Lab Sample IDs: 2454290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	119	94.3	P/P	70 - 130

Reference Method: EPA 8321B

Run ID: A123073

Included Lab Sample IDs: 2454294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.2	94.5	P/P	50 - 150
2,4,5-T	89.5	88.0	P/P	50 - 150
Acetaminophen	105	103	P/P	60 - 160
Acetamiprid	107	106	P/P	50 - 150
Afidopyropen	99.7	108	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A123073
Included Lab Sample IDs: 2454294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	89.7	91.2	P/P	50 - 160
Benzovindiflupyr	107	105	P/P	50 - 150
Carbamazepine	109	111	P/P	60 - 150
Clothianidin	105	100	P/P	60 - 150
Dinotefuran	112	111	P/P	50 - 150
Diuron	105	103	P/P	60 - 160
Fenuron	105	105	P/P	60 - 150
Fluridone	112	109	P/P	60 - 160
Hydrocodone	109	112	P/P	60 - 150
Ibuprofen	95.9	87.2	P/P	50 - 160
Imazapyr	86.3	81.2	P/P	50 - 150
Imidacloprid	96.0	97.6	P/P	60 - 150
Linuron	100	99.0	P/P	60 - 150
Mandestrobin	108	110	P/P	50 - 150
MCPP	102	103	P/P	50 - 150
Naproxen	125	102	P/P	50 - 160
Primidone	97.7	98.7	P/P	60 - 150
Pyraclostrobin	102	102	P/P	60 - 150
Silvex	107	97.9	P/P	50 - 150
Thiamethoxam	112	112	P/P	50 - 150
Tolfenpyrad	98.3	94.7	P/P	60 - 150
Triclopyr	95.2	102	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123088
Included Lab Sample IDs: 2454290

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123101
Included Lab Sample IDs: 2454290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.0	94.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123118
Included Lab Sample IDs: 2454289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	98.5	99.6	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A123207
Included Lab Sample IDs: 2454289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	94.3	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A123207

Included Lab Sample IDs: 2454289

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123358

Included Lab Sample IDs: 2454290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	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		Precision	
					LCS	SMP
DEP SOP: NU-094-1	Color (true)	102				6.01
EPA 180.1 Rev. 2.0	Turbidity	103				0.513
EPA 300.0 Rev. 2.1	Chloride	98.1	101	98.5		0.377
	Sulfate	98.0	101	98.3		0.981
EPA 350.1 Rev. 2.0	Ammonia-N	93.0	92.0	94.0		1.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	97.0	103		4.54
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	96.0			0.0
EPA 365.1 Rev. 2.0	Total-P	108	106	109		2.90
EPA 8321B	2,4-D	98.5	105	80.3		18.8
	2,4,5-T	110	94.1	79.0		17.4
	Acesulfame K	134	127	129		1.79
	Acetaminophen	88.9	91.7	106		14.6
	Acetamiprid	90.0	77.4	67.6		13.5
	Afidopyropen	83.0	81.6	73.4		10.7
	AMPA	73.8	75.3	82.9		9.72
	Bentazon	68.3				13.8
	Benzovindiflupyr	87.3	98.0	82.0		17.7
	Carbamazepine	81.0	81.9	72.5		10.2
	Clothianidin	88.3	113	98.1		12.1
	Dinotefuran	101	95.3	112		15.9
	Diuron	66.3	75.0	65.4		13.6
	Endothall	114	127	126		1.16
	Fenuron	99.8	86.4	79.7		8.07
	Fluridone	89.9	94.5	81.1		9.31
	Glufosinate	90.5	82.1	81.9		0.333
	Glyphosate	87.9	86.3	92.1		6.48
	Hydrocodone	90.0	79.4	90.5		13.0
	Ibuprofen	69.6	70.9	58.7		18.9
	Imazapyr	90.0				17.3
	Imidacloprid	86.1	141	120		14.4
	Linuron	81.7	82.4	68.2		18.8
	Mandestrobin	89.3	98.8	84.8		15.2
	MCPP	92.5	103	86.8		16.4
	Naproxen	67.6	90.0	69.1		26.2
	Primidone	85.0	94.2	109		13.6
	Pyraclostrobin	79.0	91.3	79.9		13.4
	Silvex	91.3	101	81.7		21.6
	Sucralose	101	54.8	70.4		25.0
	Thiamethoxam	92.5	89.0	101		12.7
	Tolfenpyrad	46.7	64.4	55.4		15.0
	Triclopyr	114	100	84.0		17.4
SM 2320 B-2011	Total Alkalinity	97.7				0.165
SM 2540 C-2015	TDS	103				3.89
SM 2540 D-2015	TSS	106				8.33
SM 4500-F- C-2011	Fluoride	102	101	101		0.0
SM 5310 B-2011	Organic Carbon	97.2	96.7	90.7		5.67

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2454289
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2454289
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2454289

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2454289
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2454290
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2454290
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2454290
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2454290
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2454294
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2454289
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2454289
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2454289
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2454289
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2454290

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	12/05/2023			12/05/2023 16:19	Chandler E Cox	2454289
EPA 180.1 Rev. 2.0	12/05/2023			12/05/2023 14:13	Khloe J Berg	2454289
EPA 300.0 Rev. 2.1	12/05/2023			12/08/2023 22:53	Anna M. Plaviak	2454289
EPA 350.1 Rev. 2.0	12/05/2023			12/06/2023 14:50	Ping Hua	2454290
EPA 351.2 Rev. 2.0	12/05/2023	12/06/2023 11:57	Simonne.V. Calhoun	12/07/2023 18:57	Ping Hua	2454290
EPA 353.2 Rev. 2.0	12/05/2023			12/07/2023 13:36	Fadila Guebre	2454290
EPA 365.1 Rev. 2.0	12/05/2023	12/20/2023 12:07	Adam P Silver	12/20/2023 16:16	James L Waggeberby	2454290
EPA 8321B	12/05/2023	12/05/2023 12:00	Tae K Lee	12/05/2023 14:20	Hana Lee	2454294
	12/05/2023	12/05/2023 12:00	Tae K Lee	12/05/2023 17:08	Hana Lee	2454294
	12/05/2023	12/05/2023 13:00	Hoor Shaik	12/06/2023 21:05	Juyoung Kim	2454294
SM 2320 B-2011	12/05/2023			12/13/2023 01:54	Dale L. Simmons	2454289
SM 2540 C-2015	12/05/2023			12/08/2023 16:18	Yijie Li	2454289
SM 2540 D-2015	12/05/2023			12/08/2023 16:18	Yijie Li	2454289
SM 4500-F- C-2011	12/05/2023			12/13/2023 01:54	Dale L. Simmons	2454289
SM 5310 B-2011	12/05/2023			12/06/2023 20:58	Kenneth H Lee	2454290