

Chemical Analysis Report

SE-DIST-2023-03-09-01

Florida DEP Laboratory
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DOH Accreditation E31780

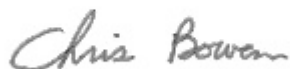
Event Description: **SMP - The Forts (Pierce and Drum)**
Request ID: **RQ-2023-02-27-41**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 28-MAR-2023 12:33



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: Fivemile Creek at SR 68

Collection Date/Time: 03/08/2023 09:00

Field ID: G2SE0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393128	EPA 8321B	2,4-D	0.0030	I	ug/L	P426940	
		Acesulfame K	0.10	U	ug/L	P426930	
		2,4,5-T	0.0040	U	ug/L	P426940	
		AMPA	0.18	I	ug/L	P426930	
		Acetaminophen	0.0080	U	ug/L	P426940	
		Acetamiprid	0.0020	U	ug/L	P426940	
		Endothall	0.25	U	ug/L	P426930	
		Glufosinate	0.10	U	ug/L	P426930	
		Glyphosate	0.49		ug/L	P426930	
		Afidopyropen	0.0020	U	ug/L	P426940	RPD
		Bentazon	8.4E-04	I	ug/L	P426940	
		Sucralose	0.032	I	ug/L	P426930	
		Benzovindiflupyr	0.0020	U	ug/L	P426940	
		Carbamazepine	8.0E-04	U	ug/L	P426940	
		Clothianidin	0.0020	U	ug/L	P426940	
		Dinotefuran	0.0020	U	ug/L	P426940	
		Diuron	0.0020	U	ug/L	P426940	
		Fenuron	0.032	U	ug/L	P426940	
		Fluridone	8.0E-04	U	ug/L	P426940	
		Imazapyr	0.050		ug/L	P426940	
		Hydrocodone	0.0020	U	ug/L	P426940	
		Ibuprofen	0.080	U	ug/L	P426940	
		Imidacloprid	0.0020	U	ug/L	P426940	
		Linuron	0.0040	U	ug/L	P426940	
		Mandestrobin	0.0020	U	ug/L	P426940	
		MCPP	0.0020	U	ug/L	P426940	
		Naproxen	0.0080	U	ug/L	P426940	
		Primidone	0.0040	U	ug/L	P426940	
		Pyraclostrobin	0.0020	U	ug/L	P426940	
		Silvex	0.0040	U	ug/L	P426940	
		Thiamethoxam	0.0020	U	ug/L	P426940	
		Tolfenpyrad	0.0020	U	ug/L	P426940	
		Triclopyr	0.0040	U	ug/L	P426940	

Sample Location: C-25 Canal Upstream of S50

Collection Date/Time: 03/08/2023 09:20

Field ID: G5SE0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393129	EPA 8321B	2,4-D	0.074		ug/L	P426940	
		Acesulfame K	0.13	I	ug/L	P426930	
		2,4,5-T	0.0040	U	ug/L	P426940	
		AMPA	0.65		ug/L	P426930	
		Acetaminophen	0.0080	U	ug/L	P426940	
		Acetamiprid	0.0020	U	ug/L	P426940	
		Endothall	0.25	U	ug/L	P426930	
		Glufosinate	0.10	U	ug/L	P426930	
		Glyphosate	2.8		ug/L	P426930	
		Afidopyropen	0.0020	U	ug/L	P426940	RPD
		Bentazon	0.0038		ug/L	P426940	
		Sucralose	0.13		ug/L	P426930	
		Benzovindiflupyr	0.0020	U	ug/L	P426940	
		Carbamazepine	8.0E-04	U	ug/L	P426940	
		Clothianidin	0.0033	I	ug/L	P426940	
		Dinotefuran	0.0020	U	ug/L	P426940	
		Diuron	0.0025	I	ug/L	P426940	
		Fenuron	0.032	U	ug/L	P426940	
		Fluridone	9.9E-04	I	ug/L	P426940	
		Imazapyr	0.070		ug/L	P426940	
		Hydrocodone	0.0020	U	ug/L	P426940	
		Ibuprofen	0.080	U	ug/L	P426940	
		Imidacloprid	0.0078	I	ug/L	P426940	
		Linuron	0.0040	U	ug/L	P426940	
		Mandestrobin	0.0020	U	ug/L	P426940	
		MCPP	0.0020	U	ug/L	P426940	
		Naproxen	0.0080	U	ug/L	P426940	
		Primidone	0.0040	U	ug/L	P426940	
		Pyraclostrobin	0.0020	U	ug/L	P426940	
		Silvex	0.0040	U	ug/L	P426940	
		Thiamethoxam	0.0020	U	ug/L	P426940	
		Tolfenpyrad	0.0020	U	ug/L	P426940	
		Triclopyr	0.0040	U	ug/L	P426940	

Sample Location: Blue Cypress Creek

Collection Date/Time: 03/08/2023 11:10

Field ID: G3SE0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2393123	DEP SOP: NU-094-1	Color (true)	170		PCU	P426951	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P426953	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P427505	
		Sulfate	2.3		mg SO4/L	P427507	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P427114	
	SM 2540 C-2015	TDS	160	A	mg/L	P427512	
	SM 2540 D-2015	TSS	2	UA	mg/L	P427358	
	SM 4500-F- C-2011	Fluoride	0.086	I	mg F/L	P427294	
2393124	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P427082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P427105	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P427128	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P427224	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P427111	

Ref. Method and Comment:

SM 2540 D-2015: 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 analytical difficulties.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P426951

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426953

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427505

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427507

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427082

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427105

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427128

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427224

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

Reference Method: EPA 8321B
Batch ID: P426930

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P426930

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P426940

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	0.0020	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: SM 2320 B-2011
Batch ID: P427114

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

Reference Method: SM 2540 C-2015
Batch ID: P427512

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P427358

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P427294

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P427111

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: P426951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426953

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427505

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427507

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427105

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: P427128

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427224

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

Reference Method: EPA 8321B
Batch ID: P426930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	104		P	40 - 150
Endothall	106		P	40 - 150
Glufosinate	99.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P426930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	115		P	40 - 150
Sucralose	98.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426940

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	100		P	40 - 150
2,4,5-T	93.0		P	40 - 150
Acetaminophen	98.5		P	30 - 150
Acetamiprid	74.1		P	40 - 150
Afidopyropen	49.0		P	30 - 150
Bentazon	97.6		P	30 - 150
Benzovindiflupyr	84.2		P	40 - 150
Carbamazepine	84.4		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	95.3		P	40 - 150
Diuron	80.9		P	40 - 150
Fenuron	89.6		P	40 - 150
Fluridone	84.4		P	40 - 150
Hydrocodone	90.0		P	40 - 150
Ibuprofen	85.2		P	40 - 150
Imazapyr	91.0		P	40 - 150
Imidacloprid	82.7		P	40 - 150
Linuron	82.4		P	40 - 150
Mandestrobin	94.8		P	40 - 150
MCPP	97.5		P	40 - 150
Naproxen	93.0		P	40 - 150
Primidone	102		P	40 - 150
Pyraclostrobin	83.1		P	40 - 150
Silvex	96.6		P	40 - 150
Thiamethoxam	81.4		P	40 - 150
Tolfenpyrad	61.2		P	30 - 150
Triclopyr	96.1		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P427114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.4		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P427512

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

Reference Method: SM 2540 D-2015
Batch ID: P427358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.7		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P427294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427111

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2392998	Chloride	102		P	90 - 110
2393134	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2392998	Sulfate	100		P	90 - 110
2393134	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393004	Ammonia-N	97.8	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393116	NO2NO3-N	94.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393205	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P426930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393147	Acesulfame K	137	143	P/P	40 - 150
2393147	AMPA	96.6	95.2	P/P	40 - 150
2393147	Endothall	112	122	P/P	40 - 150
2393147	Glufosinate	136	132	P/P	40 - 150
2393147	Glyphosate	134	137	P/P	40 - 150
2393147	Sucralose	98.7	89.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P426940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2392817	2,4-D	102	112	P/P	40 - 150
2392817	2,4,5-T	78.4	92.3	P/P	40 - 150
2392817	Acetaminophen	88.8	97.9	P/P	30 - 150
2392817	Acetamiprid	85.0	95.4	P/P	40 - 150
2392817	Afidopyropen	74.1	103	P/P	30 - 150
2392817	Bentazon	97.7	102	P/P	30 - 150
2392817	Benzovindiflupyr	72.6	81.0	P/P	40 - 150
2392817	Carbamazepine	78.3	91.5	P/P	40 - 150
2392817	Clothianidin	95.9	96.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P426940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2392817	Dinotefuran	97.7	104	P/P	40 - 150
2392817	Diuron	65.4	70.2	P/P	40 - 150
2392817	Fenuron	69.9	77.0	P/P	40 - 150
2392817	Fluridone	80.7	78.9	P/P	40 - 150
2392817	Hydrocodone	83.4	95.2	P/P	40 - 150
2392817	Ibuprofen	79.7	78.5	P/P	40 - 150
2392817	Imazapyr	80.1	96.7	P/P	40 - 150
2392817	Imidacloprid	102	105	P/P	40 - 150
2392817	Linuron	57.7	75.1	P/P	40 - 150
2392817	Mandestrobin	78.2	93.3	P/P	40 - 150
2392817	MCP	89.7	102	P/P	40 - 150
2392817	Naproxen	92.1	90.0	P/P	40 - 150
2392817	Primidone	87.3	91.5	P/P	40 - 150
2392817	Pyraclostrobin	70.4	79.5	P/P	40 - 150
2392817	Silvex	91.7	107	P/P	40 - 150
2392817	Thiamethoxam	89.4	99.4	P/P	40 - 150
2392817	Tolfenpyrad	41.7	53.7	P/P	30 - 150
2392817	Triclopyr	93.8	100	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P427294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393167	Fluoride	98.5	99.3	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P427111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2393017	Organic Carbon	95.4	98.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393168	Color (true)	1.14	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2392929	Turbidity	1.42	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2392998	Chloride	1.08	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P427507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2392998	Sulfate	1.46	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P427082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393004	Ammonia-N	0.935	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P427105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393170	Kjeldahl Nitrogen	3.49	Sample	P	0 - 15

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P427128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393116	NO2NO3-N	0.235	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P427224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393205	Total-P	1.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P426930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393147	Acesulfame K	4.02	Spike	P	0 - 30
2393147	AMPA	1.26	Spike	P	0 - 30
2393147	Endothall	8.89	Spike	P	0 - 30
2393147	Glufosinate	3.42	Spike	P	0 - 30
2393147	Glyphosate	1.72	Spike	P	0 - 30
2393147	Sucralose	6.96	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P426940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2392817	2,4-D	9.55	Spike	P	0 - 30
2392817	2,4,5-T	16.3	Spike	P	0 - 30
2392817	Acetaminophen	9.79	Spike	P	0 - 30
2392817	Acetamiprid	11.5	Spike	P	0 - 30
2392817	Afidopyropen	32.7	Spike	F	0 - 30
2392817	Bentazon	3.44	Spike	P	0 - 30
2392817	Benzovindiflupyr	10.9	Spike	P	0 - 30
2392817	Carbamazepine	15.5	Spike	P	0 - 30
2392817	Clothianidin	0.183	Spike	P	0 - 30
2392817	Dinotefuran	6.14	Spike	P	0 - 30
2392817	Diuron	6.50	Spike	P	0 - 30
2392817	Fenuron	9.57	Spike	P	0 - 30
2392817	Fluridone	2.32	Spike	P	0 - 30
2392817	Hydrocodone	13.1	Spike	P	0 - 30
2392817	Ibuprofen	1.50	Spike	P	0 - 30
2392817	Imazapyr	17.2	Spike	P	0 - 30
2392817	Imidacloprid	2.62	Spike	P	0 - 30
2392817	Linuron	26.3	Spike	P	0 - 30
2392817	Mandestrobin	17.6	Spike	P	0 - 30
2392817	MCPP	13.2	Spike	P	0 - 30
2392817	Naproxen	2.33	Spike	P	0 - 30
2392817	Primidone	4.61	Spike	P	0 - 30
2392817	Pyraclostrobin	12.0	Spike	P	0 - 30
2392817	Silvex	15.0	Spike	P	0 - 30
2392817	Thiamethoxam	10.6	Spike	P	0 - 30
2392817	Tolfenpyrad	25.3	Spike	P	0 - 30
2392817	Triclopyr	6.44	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P427114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393556	Total Alkalinity	0.490	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P427512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393123	TDS	3.13	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P427294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393167	Fluoride	0.524	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P427111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2393017	Organic Carbon	2.09	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2393128

Field Sample ID: G2SE0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	131	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.8	P	30 - 160
EPA 8321B	Diuron-d6	65.9	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	52.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.3	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	75.8	P	30 - 160

Lab Sample ID: 2393129

Field Sample ID: G5SE0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.7	P	30 - 160
EPA 8321B	Diuron-d6	59.1	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.6	P	30 - 160
EPA 8321B	Primidone-d5	87.3	P	30 - 160
EPA 8321B	Sucralose-d6	69.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117905

Included Lab Sample IDs: 2393123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A117906

Included Lab Sample IDs: 2393123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A117942

Included Lab Sample IDs: 2393128, 2393129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	101	P/P	60 - 160
Endothall	110	107	P/P	60 - 160
Glufosinate	108	117	P/P	60 - 160
Glyphosate	112	119	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A117943

Included Lab Sample IDs: 2393128, 2393129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	112	P/P	60 - 160
Sucralose	97.5	97.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A117960

Included Lab Sample IDs: 2393128, 2393129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	98.6	P/P	50 - 150
2,4,5-T	97.1	90.2	P/P	50 - 150
Acetaminophen	106	105	P/P	60 - 160
Acetamiprid	103	104	P/P	50 - 150
Afidopyropen	77.5	82.3	P/P	50 - 150
Bentazon	126	118	P/P	50 - 160
Benzovindiflupyr	101	102	P/P	50 - 150
Carbamazepine	110	109	P/P	60 - 150
Clothianidin	96.6	132	P/P	60 - 150
Dinotefuran	104	103	P/P	50 - 150
Diuron	106	111	P/P	60 - 160
Fenuron	105	125	P/P	60 - 150
Fluridone	103	109	P/P	60 - 160
Hydrocodone	104	108	P/P	60 - 150
Ibuprofen	132	110	P/P	50 - 160
Imazapyr	103	104	P/P	50 - 150
Imidacloprid	92.7	96.2	P/P	60 - 150
Linuron	98.4	83.2	P/P	60 - 150
Mandestrobin	105	103	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A117960

Included Lab Sample IDs: 2393128, 2393129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCPD	96.6	98.1	P/P	50 - 150
Naproxen	115	100	P/P	50 - 160
Primidone	104	104	P/P	60 - 150
Pyraclostrobin	107	104	P/P	60 - 150
Silvex	104	102	P/P	50 - 150
Thiamethoxam	103	117	P/P	50 - 150
Tolfenpyrad	99.7	101	P/P	60 - 150
Triclopyr	88.4	101	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117961

Included Lab Sample IDs: 2393124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117971

Included Lab Sample IDs: 2393123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.9	95.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117973

Included Lab Sample IDs: 2393124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117976

Included Lab Sample IDs: 2393124

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118044

Included Lab Sample IDs: 2393124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A118053

Included Lab Sample IDs: 2393123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	98.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118059

Included Lab Sample IDs: 2393124

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118124

Included Lab Sample IDs: 2393123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.3	100	P/P	90 - 110
Sulfate	98.3	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	MS
DEP SOP: NU-094-1	Color (true)	99.3			1.14	
EPA 180.1 Rev. 2.0	Turbidity	100			1.42	
EPA 300.0 Rev. 2.1	Chloride	101	102	99.9	1.08	
	Sulfate	101	100	98.6	1.46	
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	97.8	99.0		0.935
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101			3.49	RSD
EPA 353.2 Rev. 2.0	NO2NO3-N	101	94.8			0.235
EPA 365.1 Rev. 2.0	Total-P	101	103	105		1.97
EPA 8321B	2,4-D	100	102	112		9.55
	2,4,5-T	93.0	78.4	92.3		16.3
	Acesulfame K	115	137	143		4.02
	Acetaminophen	98.5	88.8	97.9		9.79
	Acetamiprid	74.1	85.0	95.4		11.5
	Afidopyropen	49.0	74.1	103		32.7
	AMPA	104	96.6	95.2		1.26
	Bentazon	97.6	97.7	102		3.44
	Benzovindiflupyr	84.2	72.6	81.0		10.9
	Carbamazepine	84.4	78.3	91.5		15.5
	Clothianidin	95.4	95.9	96.1		0.183
	Dinotefuran	95.3	97.7	104		6.14
	Diuron	80.9	65.4	70.2		6.50
	Endothall	106	112	122		8.89
	Fenuron	89.6	69.9	77.0		9.57
	Fluridone	84.4	80.7	78.9		2.32
	Glufosinate	99.3	136	132		3.42
	Glyphosate	115	134	137		1.72
	Hydrocodone	90.0	83.4	95.2		13.1
	Ibuprofen	85.2	79.7	78.5		1.50
	Imazapyr	91.0	80.1	96.7		17.2
	Imidacloprid	82.7	102	105		2.62
	Linuron	82.4	57.7	75.1		26.3
	Mandestrobin	94.8	78.2	93.3		17.6
	MCPP	97.5	89.7	102		13.2
	Naproxen	93.0	92.1	90.0		2.33
	Primidone	102	87.3	91.5		4.61
	Pyraclostrobin	83.1	70.4	79.5		12.0
	Silvex	96.6	91.7	107		15.0
	Sucralose	98.0	98.7	89.6		6.96
	Thiamethoxam	81.4	89.4	99.4		10.6
	Tolfenpyrad	61.2	41.7	53.7		25.3
	Triclopyr	96.1	93.8	100		6.44
SM 2320 B-2011	Total Alkalinity	96.4			0.490	
SM 2540 C-2015	TDS	107			3.13	
SM 2540 D-2015	TSS	91.7				
SM 4500-F- C-2011	Fluoride	97.7	98.5	99.3		0.524
SM 5310 B-2011	Organic Carbon	95.4	95.4	98.0		2.09

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2393123
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2393123
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2393123

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2393123
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2393124
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2393124
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2393124
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2393124
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2393128, 2393129
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2393123
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2393123
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2393123
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2393123
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2393124

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	03/09/2023			03/09/2023 13:59	Alexis Price	2393123
EPA 180.1 Rev. 2.0	03/09/2023			03/09/2023 13:56	Chandler E Cox	2393123
EPA 300.0 Rev. 2.1	03/09/2023			03/22/2023 00:43	Anna M. Plaviak	2393123
EPA 350.1 Rev. 2.0	03/09/2023			03/13/2023 13:28	Khloe J Berg	2393124
EPA 351.2 Rev. 2.0	03/09/2023	03/14/2023 16:30	Simonne.V. Calhoun	03/16/2023 13:34	Judith K. Clark	2393124
EPA 353.2 Rev. 2.0	03/09/2023			03/14/2023 10:55	Beverly Y. Sanders	2393124
EPA 365.1 Rev. 2.0	03/09/2023	03/16/2023 16:36	Adam P Silver	03/17/2023 14:13	James L Waggerby	2393124
EPA 8321B	03/09/2023	03/10/2023 09:00	Hoor Shaik	03/10/2023 20:09	Juyoung Kim	2393128
	03/09/2023	03/10/2023 09:00	Hoor Shaik	03/10/2023 20:28	Juyoung Kim	2393129
	03/09/2023	03/10/2023 10:00	Manjita Shrestha	03/10/2023 12:35	Manjita Shrestha	2393128
	03/09/2023	03/10/2023 10:00	Manjita Shrestha	03/10/2023 12:48	Manjita Shrestha	2393129
	03/09/2023	03/10/2023 10:00	Manjita Shrestha	03/10/2023 22:49	Manjita Shrestha	2393128
	03/09/2023	03/10/2023 10:00	Manjita Shrestha	03/10/2023 23:03	Manjita Shrestha	2393129
SM 2320 B-2011	03/09/2023			03/14/2023 03:33	Chandler E Cox	2393123
SM 2540 C-2015	03/09/2023			03/14/2023 16:02	Yijie Li	2393123
SM 2540 D-2015	03/09/2023			03/14/2023 16:02	Yijie Li	2393123
SM 4500-F- C-2011	03/09/2023			03/16/2023 23:22	Dale L. Simmons	2393123
SM 5310 B-2011	03/09/2023			03/13/2023 23:26	Elise M. Gillis	2393124