

Chemical Analysis Report

SE-DIST-2023-11-08-01

Florida DEP Laboratory
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DOH Accreditation E31780

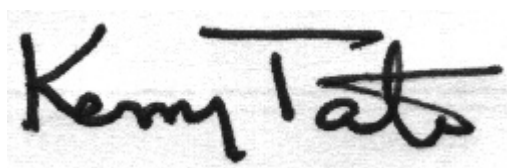
Event Description: **Fort Drum / Fort Pierce**
Request ID: **RQ-2023-11-06-51**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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2199 South Rock Road
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 27-NOV-2023 13:06

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: BLUE CYPRESS CREEK

Collection Date/Time: 11/07/2023 10:00

Field ID: G3SE0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450005	DEP SOP: NU-094-1	Color (true)	320		PCU	P437593	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P437589	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P437937	
		Sulfate	1.9		mg SO4/L	P437941	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P437916	
	SM 2540 C-2015	TDS	105		mg/L	P438106	
	SM 2540 D-2015	TSS	3	I	mg/L	P437819	
	SM 4500-F- C-2011	Fluoride	0.062	I	mg F/L	P437919	
2450006	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P437984	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P437668	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P437974	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P437793	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P437885	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FIVEMILE CREEK AT SR 68

Collection Date/Time: 11/07/2023 11:30

Field ID: G2SE0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450015	EPA 8321B	2,4-D	0.0020	U	ug/L	P437576	
		Acesulfame K	0.22	I	ug/L	P437555	
		2,4,5-T	0.0040	U	ug/L	P437576	
		AMPA	0.26	I	ug/L	P437555	
		Acetaminophen	0.0080	U	ug/L	P437576	
		Acetamiprid	0.0020	U	ug/L	P437576	
		Endothall	0.25	U	ug/L	P437555	
		Glufosinate	0.10	U	ug/L	P437555	
		Glyphosate	0.62		ug/L	P437555	
		Afidopyropen	0.0020	U	ug/L	P437576	
		Bentazon	8.0E-04	U	ug/L	P437576	
		Sucralose	1.1		ug/L	P437555	
		Benzovindiflupyr	0.0020	U	ug/L	P437576	
		Carbamazepine	8.0E-04	U	ug/L	P437576	
		Clothianidin	0.0020	U	ug/L	P437576	
		Dinotefuran	0.0020	U	ug/L	P437576	
		Diuron	0.0020	U	ug/L	P437576	
		Fenuron	0.032	U	ug/L	P437576	
		Fluridone	8.0E-04	U	ug/L	P437576	
		Imazapyr	0.014	I	ug/L	P437576	
		Hydrocodone	0.0020	U	ug/L	P437576	
		Ibuprofen	0.080	U	ug/L	P437576	
		Imidacloprid	0.0020	U	ug/L	P437576	
		Linuron	0.0040	U	ug/L	P437576	
		Mandestrobin	0.0020	U	ug/L	P437576	
		MCPP	0.0020	U	ug/L	P437576	
		Naproxen	0.0080	U	ug/L	P437576	
		Primidone	0.0040	U	ug/L	P437576	
		Pyraclostrobin	0.0020	U	ug/L	P437576	
		Silvex	0.0040	U	ug/L	P437576	
		Thiamethoxam	0.0020	U	ug/L	P437576	
		Tolfenpyrad	0.0020	U	ug/L	P437576	
		Triclopyr	0.0040	U	ug/L	P437576	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: C 25 CANAL UPSTREAM OF S50

Collection Date/Time: 11/07/2023 11:45

Field ID: G5SE0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2450016	EPA 8321B	2,4-D	0.0067	I	ug/L	P437576	
		Acesulfame K	0.10	U	ug/L	P437555	
		2,4,5-T	0.0040	U	ug/L	P437576	
		AMPA	0.67		ug/L	P437555	
		Acetaminophen	0.0080	U	ug/L	P437576	
		Acetamiprid	0.0020	U	ug/L	P437576	
		Endothall	0.25	U	ug/L	P437555	
		Glufosinate	0.10	U	ug/L	P437555	
		Glyphosate	1.2		ug/L	P437555	
		Afidopyropen	0.0020	U	ug/L	P437576	
		Bentazon	8.0E-04	U	ug/L	P437576	
		Sucralose	0.078		ug/L	P437555	
		Benzovindiflupyr	0.0020	U	ug/L	P437576	
		Carbamazepine	8.0E-04	U	ug/L	P437576	
		Clothianidin	0.0041	I	ug/L	P437576	
		Dinotefuran	0.0020	U	ug/L	P437576	
		Diuron	0.0024	I	ug/L	P437576	
		Fenuron	0.032	U	ug/L	P437576	
		Fluridone	8.0E-04	U	ug/L	P437576	
		Imazapyr	0.22		ug/L	P437576	
		Hydrocodone	0.0020	U	ug/L	P437576	
		Ibuprofen	0.080	U	ug/L	P437576	
		Imidacloprid	0.015		ug/L	P437576	
		Linuron	0.0040	U	ug/L	P437576	
		Mandestrobin	0.0020	U	ug/L	P437576	
		MCPP	0.0020	U	ug/L	P437576	
		Naproxen	0.0080	U	ug/L	P437576	
		Primidone	0.0040	U	ug/L	P437576	
		Pyraclostrobin	0.0020	U	ug/L	P437576	
		Silvex	0.0040	U	ug/L	P437576	
		Thiamethoxam	0.0020	U	ug/L	P437576	
		Tolfenpyrad	0.0020	U	ug/L	P437576	
		Triclopyr	0.0040	U	ug/L	P437576	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imazapyr 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: P437593

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437937

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437941

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

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

Reference Method: EPA 8321B
Batch ID: P437555

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: P437555

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

Reference Method: EPA 8321B

Batch ID: P437576

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: P437916

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

Reference Method: SM 2540 C-2015

Batch ID: P438106

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P437819

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437885

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: P437593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437937

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437941

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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: P437793

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

Reference Method: EPA 8321B
Batch ID: P437555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	68.3		P	40 - 160
Endothall	90.8		P	40 - 160
Glufosinate	89.3		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P437555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	95.5		P	40 - 160
Sucralose	100		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.5		P	40 - 150
2,4,5-T	82.6		P	40 - 150
Acetaminophen	86.9		P	30 - 150
Acetamiprid	84.9		P	40 - 150
Afidopyropen	36.6		P	30 - 150
Bentazon	69.4		P	30 - 150
Benzovindiflupyr	82.8		P	40 - 150
Carbamazepine	70.1		P	40 - 150
Clothianidin	90.9		P	40 - 150
Dinotefuran	100		P	40 - 150
Diuron	68.6		P	40 - 150
Fenuron	92.0		P	40 - 150
Fluridone	87.1		P	40 - 150
Hydrocodone	94.5		P	40 - 150
Ibuprofen	64.6		P	40 - 150
Imazapyr	88.2		P	40 - 150
Imidacloprid	89.8		P	40 - 150
Linuron	75.6		P	40 - 150
Mandestrobin	90.7		P	40 - 150
MCPP	81.9		P	40 - 150
Naproxen	60.5		P	40 - 150
Primidone	84.4		P	40 - 150
Pyraclostrobin	82.3		P	40 - 150
Silvex	81.9		P	40 - 150
Thiamethoxam	89.4		P	40 - 150
Tolfenpyrad	51.7		P	30 - 150
Triclopyr	75.4		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P437916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.0		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449657	Chloride	106		P	90 - 110
2449944	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449657	Sulfate	107		P	90 - 110
2449944	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449890	Ammonia-N	97.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450024	Kjeldahl Nitrogen	111	111	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449272	NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450132	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P437555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449881	Acesulfame K	118	119	P/P	40 - 150
2449881	AMPA	68.2	75.0	P/P	40 - 160
2449881	Endothall	84.0	98.6	P/P	40 - 160
2449881	Glufosinate	88.2	87.5	P/P	40 - 160
2449881	Glyphosate	88.6	96.5	P/P	40 - 160
2449881	Sucralose	106	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P437576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449966	2,4-D	105	117	P/P	40 - 150
2449966	2,4,5-T	80.7	90.1	P/P	40 - 150
2449966	Acetaminophen	110	112	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P437576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449966	Acetamiprid	81.4	91.8	P/P	40 - 150
2449966	Afidopyropen	68.3	79.2	P/P	30 - 150
2449966	Bentazon	40.9	40.2	P/P	30 - 150
2449966	Benzovindiflupyr	86.2	88.7	P/P	40 - 150
2449966	Carbamazepine	64.0	65.5	P/P	40 - 150
2449966	Clothianidin	105	109	P/P	40 - 150
2449966	Dinotefuran	107	112	P/P	40 - 150
2449966	Diuron	61.0	65.3	P/P	40 - 150
2449966	Fenuron	74.6	77.4	P/P	40 - 150
2449966	Fluridone	85.5	88.2	P/P	40 - 150
2449966	Hydrocodone	84.6	88.4	P/P	40 - 150
2449966	Ibuprofen	66.4	72.3	P/P	40 - 150
2449966	Imidacloprid	123	134	P/P	40 - 150
2449966	Linuron	69.8	73.9	P/P	40 - 150
2449966	Mandestrobin	93.1	99.6	P/P	40 - 150
2449966	MCCP	88.6	94.9	P/P	40 - 150
2449966	Naproxen	71.8	73.4	P/P	40 - 150
2449966	Primidone	92.4	94.7	P/P	40 - 150
2449966	Pyraclostrobin	84.7	87.2	P/P	40 - 150
2449966	Silvex	93.1	96.0	P/P	40 - 150
2449966	Thiamethoxam	102	105	P/P	40 - 150
2449966	Tolfenpyrad	57.7	61.1	P/P	30 - 150
2449966	Triclopyr	87.7	91.7	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449973	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449972	Organic Carbon	93.9	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449971	Turbidity	6.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449657	Chloride	1.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449657	Sulfate	1.86	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449890	Ammonia-N	0.798	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450024	Kjeldahl Nitrogen	0.115	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449272	NO2NO3-N	0.669	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450132	Total-P	0.845	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P437555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449881	Acesulfame K	0.668	Spike	P	0 - 30
2449881	AMPA	8.78	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P437555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449881	Endothall	16.0	Spike	P	0 - 30
2449881	Glufosinate	0.823	Spike	P	0 - 30
2449881	Glyphosate	8.19	Spike	P	0 - 30
2449881	Sucralose	7.76	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P437576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449966	2,4-D	10.7	Spike	P	0 - 30
2449966	2,4,5-T	11.0	Spike	P	0 - 30
2449966	Acetaminophen	2.15	Spike	P	0 - 30
2449966	Acetamiprid	12.0	Spike	P	0 - 30
2449966	Afidopyropen	14.8	Spike	P	0 - 30
2449966	Bentazon	1.79	Spike	P	0 - 30
2449966	Benzovindiflupyr	2.95	Spike	P	0 - 30
2449966	Carbamazepine	2.42	Spike	P	0 - 30
2449966	Clothianidin	3.46	Spike	P	0 - 30
2449966	Dinotefuran	4.98	Spike	P	0 - 30
2449966	Diuron	6.74	Spike	P	0 - 30
2449966	Fenuron	3.71	Spike	P	0 - 30
2449966	Fluridone	3.06	Spike	P	0 - 30
2449966	Hydrocodone	4.31	Spike	P	0 - 30
2449966	Ibuprofen	8.52	Spike	P	0 - 30
2449966	Imazapyr	0.603	Spike	P	0 - 30
2449966	Imidacloprid	8.58	Spike	P	0 - 30
2449966	Linuron	5.62	Spike	P	0 - 30
2449966	Mandestrobin	6.65	Spike	P	0 - 30
2449966	MCPP	6.81	Spike	P	0 - 30
2449966	Naproxen	2.13	Spike	P	0 - 30
2449966	Primidone	2.52	Spike	P	0 - 30
2449966	Pyraclostrobin	2.97	Spike	P	0 - 30
2449966	Silvex	3.13	Spike	P	0 - 30
2449966	Thiamethoxam	2.97	Spike	P	0 - 30
2449966	Tolfenpyrad	5.64	Spike	P	0 - 30
2449966	Triclopyr	4.40	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P437916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Total Alkalinity	0.00966	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015

Batch ID: P438106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449420	TDS	6.99	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P437919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449973	Fluoride	0.467	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449972	Organic Carbon	1.01	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2450015
Field Sample ID: G2SE0072

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.3	P	30 - 160
EPA 8321B	Diuron-d6	51.7	P	30 - 160
EPA 8321B	Endothall-d6	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.8	P	30 - 160
EPA 8321B	Primidone-d5	66.9	P	30 - 160
EPA 8321B	Sucralose-d6	130	P	30 - 160

Lab Sample ID: 2450016
Field Sample ID: G5SE0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	65.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.9	P	30 - 160
EPA 8321B	Diuron-d6	44.9	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.7	P	30 - 160
EPA 8321B	Primidone-d5	51.5	P	30 - 160
EPA 8321B	Sucralose-d6	91.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122607

Included Lab Sample IDs: 2450015, 2450016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	72.4	80.1	P/P	60 - 160
AMPA	80.1	81.1	P/P	60 - 160
Endothall	90.0	91.2	P/P	60 - 160
Endothall	91.2	88.0	P/P	60 - 160
Glufosinate	83.3	79.2	P/P	60 - 160
Glufosinate	88.9	83.3	P/P	60 - 160
Glyphosate	85.1	84.1	P/P	60 - 160
Glyphosate	85.6	85.1	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122634

Included Lab Sample IDs: 2450005

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

Reference Method: DEP SOP: NU-094-1

Run ID: A122635

Included Lab Sample IDs: 2450005

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

Reference Method: EPA 8321B

Run ID: A122684

Included Lab Sample IDs: 2450015, 2450016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	127	P/P	60 - 160
Acesulfame K	127	119	P/P	60 - 160
Sucralose	105	114	P/P	60 - 160
Sucralose	114	112	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122706

Included Lab Sample IDs: 2450006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122727

Included Lab Sample IDs: 2450015, 2450016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.2	90.2	P/P	50 - 150
2,4,5-T	93.4	88.1	P/P	50 - 150
Acetaminophen	107	108	P/P	60 - 160
Acetamiprid	109	109	P/P	50 - 150
Afidopyropen	98.6	105	P/P	50 - 150
Bentazon	94.0	89.8	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122727

Included Lab Sample IDs: 2450015, 2450016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	105	107	P/P	50 - 150
Carbamazepine	104	102	P/P	60 - 150
Clothianidin	109	111	P/P	60 - 150
Dinotefuran	110	113	P/P	50 - 150
Diuron	107	99.7	P/P	60 - 160
Fenuron	106	105	P/P	60 - 150
Fluridone	110	112	P/P	60 - 160
Hydrocodone	112	112	P/P	60 - 150
Ibuprofen	99.5	98.1	P/P	50 - 160
Imazapyr	89.5	91.9	P/P	50 - 150
Imidacloprid	102	103	P/P	60 - 150
Linuron	90.8	94.2	P/P	60 - 150
Mandestrobin	110	111	P/P	50 - 150
MCPP	94.2	93.6	P/P	50 - 150
Naproxen	95.9	87.4	P/P	50 - 160
Primidone	99.8	92.4	P/P	60 - 150
Pyraclostrobin	105	106	P/P	60 - 150
Silvex	91.2	95.8	P/P	50 - 150
Thiamethoxam	111	113	P/P	50 - 150
Tolfenpyrad	97.7	99.1	P/P	60 - 150
Triclopyr	93.3	91.9	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122736

Included Lab Sample IDs: 2450005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	103	P/P	90 - 110
Sulfate	105	103	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122760

Included Lab Sample IDs: 2450006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122761

Included Lab Sample IDs: 2450006

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

Reference Method: SM 2320 B-2011

Run ID: A122774

Included Lab Sample IDs: 2450005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A122774

Included Lab Sample IDs: 2450005

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122800

Included Lab Sample IDs: 2450006

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122806

Included Lab Sample IDs: 2450006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.4	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)	98.6				
EPA 180.1 Rev. 2.0	Turbidity	104				6.00
EPA 300.0 Rev. 2.1	Chloride	108	106	106		1.55
	Sulfate	108	107	107		1.86
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	97.6	98.8		
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	111	111		
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.0	98.0		
EPA 365.1 Rev. 2.0	Total-P	107	109	108		
EPA 8321B	2,4-D	95.5	105	117		
	2,4,5-T	82.6	80.7	90.1		
	Acesulfame K	103	118	119		
	Acetaminophen	86.9	110	112		
	Acetamiprid	84.9	81.4	91.8		
	Afidopyropen	36.6	68.3	79.2		
	AMPA	68.3	68.2	75.0		
	Bentazon	69.4	40.9	40.2		
	Benzovindiflupyr	82.8	86.2	88.7		
	Carbamazepine	70.1	64.0	65.5		
	Clothianidin	90.9	105	109		
	Dinotefuran	100	107	112		
	Diuron	68.6	61.0	65.3		
	Endothall	90.8	84.0	98.6		
	Fenuron	92.0	74.6	77.4		
	Fluridone	87.1	85.5	88.2		
	Glufosinate	89.3	88.2	87.5		
	Glyphosate	95.5	88.6	96.5		
	Hydrocodone	94.5	84.6	88.4		
	Ibuprofen	64.6	66.4	72.3		
	Imazapyr	88.2				
	Imidacloprid	89.8	123	134		
	Linuron	75.6	69.8	73.9		
	Mandestrobin	90.7	93.1	99.6		
	MCPP	81.9	88.6	94.9		
	Naproxen	60.5	71.8	73.4		
	Primidone	84.4	92.4	94.7		
	Pyraclostrobin	82.3	84.7	87.2		
	Silvex	81.9	93.1	96.0		
	Sucralose	100	106	114		
	Thiamethoxam	89.4	102	105		
	Tolfenpyrad	51.7	57.7	61.1		
	Triclopyr	75.4	87.7	91.7		
SM 2320 B-2011	Total Alkalinity	101				0.0096
SM 2540 C-2015	TDS	94.0				6.99
SM 2540 D-2015	TSS	102				
SM 4500-F- C-2011	Fluoride	103	102	101		
SM 5310 B-2011	Organic Carbon	94.5	93.9	95.2		

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2450005
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2450005
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2450005

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2450005
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2450006
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2450006
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2450006
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2450006
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2450015, 2450016
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2450005
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2450005
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2450005
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2450005
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2450006

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	11/08/2023			11/08/2023 16:14	Anna M. Plaviak	2450005
EPA 180.1 Rev. 2.0	11/08/2023			11/08/2023 14:48	Samantha L Bates	2450005
EPA 300.0 Rev. 2.1	11/08/2023			11/16/2023 12:18	James L Waggeberby	2450005
EPA 350.1 Rev. 2.0	11/08/2023			11/17/2023 15:06	Khloe J Berg	2450006
EPA 351.2 Rev. 2.0	11/08/2023	11/13/2023 14:50	Simonne.V. Calhoun	11/14/2023 11:59	Samantha L Bates	2450006
EPA 353.2 Rev. 2.0	11/08/2023			11/17/2023 11:44	Fadila Guebre	2450006
EPA 365.1 Rev. 2.0	11/08/2023	11/15/2023 11:07	Adam P Silver	11/16/2023 10:24	James L Waggeberby	2450006
EPA 8321B	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 00:11	Tae K Lee	2450015
	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 00:39	Tae K Lee	2450016
	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 20:22	Tae K Lee	2450015
	11/08/2023	11/08/2023 16:00	Hana Lee	11/09/2023 20:51	Tae K Lee	2450016
	11/08/2023	11/13/2023 09:00	Hoor Shaik	11/14/2023 23:04	Juyoung Kim	2450015
	11/08/2023	11/13/2023 09:00	Hoor Shaik	11/14/2023 23:22	Juyoung Kim	2450016
SM 2320 B-2011	11/08/2023			11/16/2023 00:33	Dale L. Simmons	2450005
SM 2540 C-2015	11/08/2023			11/09/2023 13:42	Yijie Li	2450005
SM 2540 D-2015	11/08/2023			11/09/2023 13:42	Yijie Li	2450005
SM 4500-F- C-2011	11/08/2023			11/16/2023 00:33	Dale L. Simmons	2450005
SM 5310 B-2011	11/08/2023			11/15/2023 17:19	Khloe J Berg	2450006