

Chemical Analysis Report

NW-DIST-2022-07-15-01

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

Event Description: **Dune Lakes Run**
Request ID: **RQ-2022-07-11-36**
Customer: **NW-DIST**
Project ID: **SMP**

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Date Certified: 01-AUG-2022 10:03



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: Western Lake

Collection Date/Time: 07/14/2022 11:30

Field ID: G3NW0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341923	EPA 180.1 Rev. 2.0	Turbidity	0.90	I	NTU	P416747	
	SM 2320 B-2011	Total Alkalinity	46		mg CaCO3/L	P417217	
	SM 2540 D-2011	TSS	2	I	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.33		mg F/L	P417220	
2341925	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P417179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P416990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P416859	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P416887	
	SM 5310 B-2011	Organic Carbon	6.6		mg C/L	P417049	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Eastern Lake off of Center Avenue

Collection Date/Time: 07/14/2022 10:40

Field ID: G3NW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341935	EPA 8321B	2,4-D	0.0020	U	ug/L	P416789	
		Acesulfame K	0.10	U	ug/L	P416590	
		2,4,5-T	0.0040	U	ug/L	P416789	
		AMPA	1.0	U	ug/L	P416590	
		Acetaminophen	0.0080	U	ug/L	P416789	
		Acetamiprid	0.0020	U	ug/L	P416789	
		Endothall	0.25	U	ug/L	P416590	
		Glufosinate	1.0	UJ	ug/L	P416590	LCS
		Glyphosate	1.0	U	ug/L	P416590	
		Afidopyropen	0.0020	U	ug/L	P416789	
		Bentazon	8.0E-04	U	ug/L	P416789	
		Sucralose	0.042		ug/L	P416590	
		Benzovindiflupyr	0.0020	U	ug/L	P416789	
		Carbamazepine	8.0E-04	U	ug/L	P416789	
		Clothianidin	0.0020	U	ug/L	P416789	
		Dinotefuran	0.0020	U	ug/L	P416789	
		Diuron	0.0020	U	ug/L	P416789	
		Fenuron	0.032	U	ug/L	P416789	
		Fluridone	8.0E-04	U	ug/L	P416789	
		Imazapyr	0.0040	U	ug/L	P416789	
		Hydrocodone	0.0020	U	ug/L	P416789	
		Ibuprofen	0.080	U	ug/L	P416789	
		Imidacloprid	0.0066	I	ug/L	P416789	MS
		Linuron	0.0040	U	ug/L	P416789	
		Mandestrobin	0.0020	U	ug/L	P416789	
		MCPP	0.0040	U	ug/L	P416789	
		Naproxen	0.0080	U	ug/L	P416789	
		Primidone	0.0040	U	ug/L	P416789	
		Pyraclostrobin	0.0020	U	ug/L	P416789	
		Silvex	0.0040	U	ug/L	P416789	
		Thiamethoxam	0.0020	U	ug/L	P416789	
		Tolfenpyrad	0.0020	U	ug/L	P416789	
		Triclopyr	0.0040	U	ug/L	P416789	

Ref. Method and Comment:

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Alligator Lake

Collection Date/Time: 07/14/2022 12:10

Field ID: G3NW0219

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2341924	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P416747	
	SM 2320 B-2011	Total Alkalinity	29		mg CaCO3/L	P417216	
	SM 2540 D-2011	TSS	2	U	mg/L	P417128	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P417218	
2341926	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417179	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P416990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416859	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P416887	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P417049	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416747

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417179

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416859

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416887

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

Reference Method: EPA 8321B
Batch ID: P416590

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P416789

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P416789

Component	Result	Code	Units
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P417216

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

Reference Method: SM 2320 B-2011

Batch ID: P417217

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

Reference Method: SM 2540 D-2011

Batch ID: P417128

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P417218

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011

Batch ID: P417220

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P417049

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416747

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416859

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416887

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

Reference Method: EPA 8321B
Batch ID: P416590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.4		P	40 - 150
AMPA	118		P	40 - 150
Endothall	123		P	40 - 150
Glufosinate	155		F	40 - 150
Glyphosate	113		P	40 - 150
Sucralose	93.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P416789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 150
2,4,5-T	94.6		P	40 - 150
Acetaminophen	95.0		P	30 - 150
Acetamiprid	103		P	40 - 150
Afidopyropen	73.9		P	30 - 150
Bentazon	116		P	30 - 150
Benzovindiflupyr	96.4		P	40 - 150
Carbamazepine	95.8		P	40 - 150
Clothianidin	102		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	88.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P416789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	108		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	98.4		P	40 - 150
Ibuprofen	89.9		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	141		P	40 - 150
Linuron	96.5		P	40 - 150
Mandestrobin	95.9		P	40 - 150
MCPP	110		P	40 - 150
Naproxen	72.7		P	40 - 150
Primidone	106		P	40 - 150
Pyraclostrobin	86.4		P	40 - 150
Silvex	88.4		P	40 - 150
Thiamethoxam	98.5		P	40 - 150
Tolfenpyrad	57.9		P	30 - 150
Triclopyr	105		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P417216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P417217

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

Reference Method: SM 4500-F- C-2011
Batch ID: P417218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

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

Reference Method: SM 5310 B-2011
Batch ID: P417049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341487	Ammonia-N	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341487	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341925	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P416590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341960	Acesulfame K	84.3	84.3	P/P	40 - 150
2341960	AMPA	101	101	P/P	40 - 150
2341960	Endothall	122	121	P/P	40 - 150
2341960	Glufosinate	86.5	92.8	P/P	40 - 150
2341960	Glyphosate	86.1	87.6	P/P	40 - 150
2341960	Sucralose	92.1	91.7	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P416789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341960	2,4,5-T	94.1	77.6	P/P	40 - 150
2341960	Acetaminophen	116	110	P/P	30 - 150
2341960	Acetamiprid	89.2	83.7	P/P	40 - 150
2341960	Afidopyropen	85.7	83.8	P/P	30 - 150
2341960	Bentazon	105	92.6	P/P	30 - 150
2341960	Benzovindiflupyr	93.6	87.0	P/P	40 - 150
2341960	Carbamazepine	99.7	92.9	P/P	40 - 150
2341960	Clothianidin	121	110	P/P	40 - 150
2341960	Dinotefuran	137	136	P/P	40 - 150
2341960	Diuron	77.3	69.4	P/P	40 - 150
2341960	Fenuron	97.3	89.4	P/P	40 - 150
2341960	Fluridone	102	104	P/P	40 - 150
2341960	Hydrocodone	104	104	P/P	40 - 150
2341960	Ibuprofen	84.4	82.3	P/P	40 - 150
2341960	Imazapyr	103	94.7	P/P	40 - 150
2341960	Imidacloprid	150	141	F/P	40 - 150
2341960	Linuron	86.5	88.8	P/P	40 - 150
2341960	Mandestrobin	90.1	85.5	P/P	40 - 150
2341960	MCCP	110	103	P/P	40 - 150
2341960	Naproxen	86.7	78.6	P/P	40 - 150
2341960	Primidone	120	115	P/P	40 - 150
2341960	Pyraclostrobin	87.1	84.5	P/P	40 - 150
2341960	Silvex	91.9	80.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P416789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341960	Thiamethoxam	133	126	P/P	40 - 150
2341960	Tolfenpyrad	58.2	57.2	P/P	30 - 150
2341960	Triclopyr	96.7	89.0	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P417218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342498	Fluoride	98.1	99.3	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343211	Fluoride	99.4	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341979	Organic Carbon	94.8	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341789	Turbidity	3.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341487	Ammonia-N	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341526	Kjeldahl Nitrogen	5.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341487	NO2NO3-N	0.687	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341925	Total-P	0.0490	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P416590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341960	Acesulfame K	0.0195	Spike	P	0 - 30
2341960	AMPA	0.312	Spike	P	0 - 30
2341960	Endothall	1.50	Spike	P	0 - 30
2341960	Glufosinate	7.05	Spike	P	0 - 30
2341960	Glyphosate	1.72	Spike	P	0 - 30
2341960	Sucralose	0.321	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P416789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341960	2,4-D	9.74	Spike	P	0 - 30
2341960	2,4,5-T	19.2	Spike	P	0 - 30
2341960	Acetaminophen	5.68	Spike	P	0 - 30
2341960	Acetamidrid	6.36	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P416789

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

Reference Method: SM 2320 B-2011
Batch ID: P417216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342498	Total Alkalinity	1.27	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P417217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343211	Total Alkalinity	0.165	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P417218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342498	Fluoride	0.967	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P417220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343211	Fluoride	0.483	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P417049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341979	Organic Carbon	1.06	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2341935

Field Sample ID: G3NW0124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.8	P	30 - 160
EPA 8321B	Diuron-d6	90.7	P	30 - 160
EPA 8321B	Endothall-d6	73.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.1	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	78.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113539

Included Lab Sample IDs: 2341923, 2341924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105
Turbidity	98.5	98.0	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A113571

Included Lab Sample IDs: 2341935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	107	P/P	60 - 160
Endothall	63.5	63.6	P/P	60 - 160
Glufosinate	74.8	78.3	P/P	60 - 160
Glyphosate	96.3	102	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A113572

Included Lab Sample IDs: 2341935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.1	86.8	P/P	60 - 160
Sucralose	97.0	95.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113585

Included Lab Sample IDs: 2341925, 2341926

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

Reference Method: EPA 8321B

Run ID: A113656

Included Lab Sample IDs: 2341935

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113656
Included Lab Sample IDs: 2341935

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

Reference Method: SM 5310 B-2011
Run ID: A113669
Included Lab Sample IDs: 2341925, 2341926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113693
Included Lab Sample IDs: 2341925, 2341926

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113711
Included Lab Sample IDs: 2341925, 2341926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113720
Included Lab Sample IDs: 2341925, 2341926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	96.7	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A113724
Included Lab Sample IDs: 2341923, 2341924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	101	P/P	90 - 110
Total Alkalinity	98.1	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A113724

Included Lab Sample IDs: 2341923, 2341924

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	94.9				3.07	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	102	106			1.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109					5.58
EPA 353.2 Rev. 2.0	NO2NO3-N	106	104	105			0.687
EPA 365.1 Rev. 2.0	Total-P	102	102	102			0.0490
EPA 8321B	2,4-D	111					9.74
	2,4,5-T	94.6	94.1	77.6			19.2
	Acesulfame K	81.4	84.3	84.3			0.0195
	Acetaminophen	95.0	116	110			5.68
	Acetamiprid	103	89.2	83.7			6.36
	Afidopyropen	73.9	85.7	83.8			2.21
	AMPA	118	101	101			0.312
	Bentazon	116	105	92.6			9.87
	Benzovindiflupyr	96.4	93.6	87.0			7.34
	Carbamazepine	95.8	99.7	92.9			7.03
	Clothianidin	102	121	110			9.52
	Dinotefuran	101	137	136			1.19
	Diuron	88.1	77.3	69.4			10.8
	Endothall	123	122	121			1.50
	Fenuron	108	97.3	89.4			8.47
	Fluridone	102	102	104			1.05
	Glufosinate	155	86.5	92.8			7.05
	Glyphosate	113	86.1	87.6			1.72
	Hydrocodone	98.4	104	104			0.319
	Ibuprofen	89.9	84.4	82.3			2.57
	Imazapyr	103	103	94.7			7.78
	Imidacloprid	141	150	141			6.37
	Linuron	96.5	86.5	88.8			2.69
	Mandestrobin	95.9	90.1	85.5			5.27
	MCPP	110	110	103			6.98
	Naproxen	72.7	86.7	78.6			9.78
	Primidone	106	120	115			4.39
	Pyraclostrobin	86.4	87.1	84.5			3.07
	Silvex	88.4	91.9	80.7			13.1
	Sucralose	93.6	92.1	91.7			0.321
	Thiamethoxam	98.5	133	126			5.47
	Tolfenpyrad	57.9	58.2	57.2			1.80
	Triclopyr	105	96.7	89.0			8.32
SM 2320 B-2011	Total Alkalinity	99.1				1.27	
	Total Alkalinity	100				0.165	
SM 4500-F- C-2011	Fluoride	98.4	98.1	99.3			0.967
	Fluoride	101	99.4	98.6			0.483
SM 5310 B-2011	Organic Carbon	97.3	94.8	96.4			1.06

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2341923, 2341924
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2341925, 2341926
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2341925, 2341926
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2341925, 2341926
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2341925, 2341926
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2341935

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2341923, 2341924
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2341923, 2341924
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2341923, 2341924
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2341925, 2341926

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/15/2022			07/15/2022 13:27	Anna M. Plaviak	2341923
	07/15/2022			07/15/2022 13:30	Anna M. Plaviak	2341924
EPA 350.1 Rev. 2.0	07/15/2022			07/26/2022 12:38	Judith K. Clark	2341925
	07/15/2022			07/26/2022 12:39	Judith K. Clark	2341926
EPA 351.2 Rev. 2.0	07/15/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 15:16	Samantha L Bates	2341925
	07/15/2022	07/25/2022 15:00	Simonne.V. Calhoun	07/26/2022 15:17	Samantha L Bates	2341926
EPA 353.2 Rev. 2.0	07/15/2022			07/19/2022 15:21	Judith K. Clark	2341925
	07/15/2022			07/19/2022 15:22	Judith K. Clark	2341926
EPA 365.1 Rev. 2.0	07/15/2022	07/21/2022 15:53	Adam P Silver	07/25/2022 14:22	James L Waggeberby	2341925
	07/15/2022	07/21/2022 15:53	Adam P Silver	07/25/2022 14:34	James L Waggeberby	2341926
EPA 8321B	07/15/2022	07/18/2022 10:10	Umesh Chiluwal	07/18/2022 15:56	Umesh Chiluwal	2341935
	07/15/2022	07/18/2022 10:10	Umesh Chiluwal	07/18/2022 18:58	Umesh Chiluwal	2341935
	07/15/2022	07/18/2022 10:10	Umesh Chiluwal	07/19/2022 08:31	Umesh Chiluwal	2341935
	07/15/2022	07/19/2022 09:00	June Rhew	07/22/2022 03:16	Juyoung Kim	2341935
SM 2320 B-2011	07/15/2022			07/26/2022 21:16	Dale L. Simmons	2341924
	07/15/2022			07/27/2022 03:00	Dale L. Simmons	2341923
SM 2540 D-2011	07/15/2022			07/19/2022 15:12	Yijie Li	2341923, 2341924
SM 4500-F- C-2011	07/15/2022			07/26/2022 21:16	Dale L. Simmons	2341924
	07/15/2022			07/26/2022 23:46	Dale L. Simmons	2341923
SM 5310 B-2011	07/15/2022			07/22/2022 05:59	Touraj Touran	2341925
	07/15/2022			07/22/2022 06:14	Touraj Touran	2341926