

Chemical Analysis Report

NW-DIST-2022-06-17-01

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

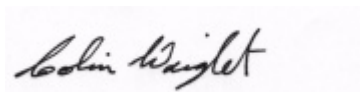
Event Description: **Dune Lakes Run**
Request ID: **RQ-2022-06-13-30**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government Street
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Certified by: Colin Wright, Program Administrator

Date Certified: 11-JUL-2022 13:49

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: 06/16/2022 11:25

Field ID: G3NW0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335404	EPA 180.1 Rev. 2.0	Turbidity	0.95	I	NTU	P415372	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P415769	
	SM 2540 D-2011	TSS	2	U	mg/L	P415799	
	SM 4500-F- C-2011	Fluoride	0.31		mg F/L	P415773	
2335406	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P415820	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P415707	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416201	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P415811	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P415533	

Ref. Method and Comment:

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

Sample Location: Alligator Lake

Collection Date/Time: 06/16/2022 12:15

Field ID: G3NW0219

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335405	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P415372	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P415767	
	SM 2540 D-2011	TSS	3	I	mg/L	P415799	
	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P415771	
2335407	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P415820	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P415785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P415835	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P415811	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P415533	

Ref. Method and Comment:

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

Sample Location: Eastern Lake off of Center Avenue

Collection Date/Time: 06/16/2022 10:34

Field ID: G3NW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335429	EPA 8321B	Acesulfame K	1.0	U	ug/L	P415517	
		2,4-D	0.0020	U	ug/L	P415325	
		AMPA	1.0	U	ug/L	P415517	
		2,4,5-T	0.0040	U	ug/L	P415325	
		Acetaminophen	0.0080	U	ug/L	P415325	
		Endothall	0.25	U	ug/L	P415517	
		Acetamiprid	0.0020	U	ug/L	P415325	
		Glufosinate	1.0	U	ug/L	P415517	
		Glyphosate	1.0	U	ug/L	P415517	
		Afidopyropen	0.0020	U	ug/L	P415325	
		Sucralose	0.10	U	ug/L	P415517	
		Bentazon	8.0E-04	U	ug/L	P415325	
		Benzovindiflupyr	0.0020	U	ug/L	P415325	
		Carbamazepine	8.0E-04	U	ug/L	P415325	
		Clothianidin	0.0020	U	ug/L	P415325	
		Dinotefuran	0.0020	U	ug/L	P415325	
		Diuron	0.0020	U	ug/L	P415325	
		Fenuron	0.032	U	ug/L	P415325	
		Fluridone	0.0011	I	ug/L	P415325	
		Imazapyr	0.0053	I	ug/L	P415325	
		Hydrocodone	0.0020	U	ug/L	P415325	
		Ibuprofen	0.080	U	ug/L	P415325	
		Imidacloprid	0.011		ug/L	P415325	
		Linuron	0.0040	U	ug/L	P415325	
		Mandestrobin	0.0020	U	ug/L	P415325	
		MCPP	0.0040	U	ug/L	P415325	
		Naproxen	0.0080	U	ug/L	P415325	
		Primidone	0.0040	U	ug/L	P415325	
		Pyraclostrobin	0.0020	U	ug/L	P415325	
		Silvex	0.0040	U	ug/L	P415325	
		Thiamethoxam	0.0020	U	ug/L	P415325	
		Tolfenpyrad	0.0020	U	ug/L	P415325	
		Triclopyr	0.0040	U	ug/L	P415325	

Ref. Method and Comment:
 EPA 8321B: MDLs are elevated due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415372

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415820

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

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

Reference Method: EPA 8321B
Batch ID: P415325

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P415325

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

Reference Method: EPA 8321B

Batch ID: P415517

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

Reference Method: SM 2320 B-2011

Batch ID: P415767

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO3/L

Reference Method: SM 2320 B-2011

Batch ID: P415769

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO3/L

Reference Method: SM 2540 D-2011

Batch ID: P415799

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P415771

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415533

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: P415372

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	91.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

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: P415835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

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

Reference Method: EPA 8321B
Batch ID: P415325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.9		P	40 - 150
2,4,5-T	47.0		P	40 - 150
Acetaminophen	79.8		P	30 - 150
Acetamiprid	92.7		P	40 - 150
Afidopyropen	70.5		P	30 - 150
Bentazon	73.6		P	30 - 150
Benzovindiflupyr	85.1		P	40 - 150
Carbamazepine	90.6		P	40 - 150
Clothianidin	95.3		P	40 - 150
Dinotefuran	91.8		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P415325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	92.1		P	40 - 150
Fenuron	87.9		P	40 - 150
Fluridone	81.0		P	40 - 150
Hydrocodone	89.4		P	40 - 150
Ibuprofen	61.2		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	92.6		P	40 - 150
Linuron	85.9		P	40 - 150
Mandestrobin	83.0		P	40 - 150
MCPP	77.3		P	40 - 150
Naproxen	69.4		P	40 - 150
Primidone	93.0		P	40 - 150
Pyraclostrobin	75.8		P	40 - 150
Silvex	55.4		P	40 - 150
Thiamethoxam	85.7		P	40 - 150
Tolfenpyrad	46.7		P	30 - 150
Triclopyr	52.7		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P415517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	86.3		P	40 - 150
AMPA	107		P	40 - 150
Endothall	105		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	97.2		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P415767

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

Reference Method: SM 2320 B-2011

Batch ID: P415769

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

Reference Method: SM 4500-F- C-2011

Batch ID: P415771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P415533

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415820

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335142	Ammonia-N	100	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334733	Kjeldahl Nitrogen	108	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	110	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337061	NO2NO3-N	91.4	91.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335950	NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335406	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P415325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334980	2,4-D	85.8	84.3	P/P	40 - 150
2334980	2,4,5-T	41.5	45.4	P/P	40 - 150
2334980	Acetaminophen	94.0	96.8	P/P	30 - 150
2334980	Acetamiprid	83.6	81.2	P/P	40 - 150
2334980	Afidopyropen	64.9	72.3	P/P	30 - 150
2334980	Bentazon	60.1	60.3	P/P	30 - 150
2334980	Benzovindiflupyr	82.1	77.7	P/P	40 - 150
2334980	Carbamazepine	86.4	91.9	P/P	40 - 150
2334980	Clothianidin	82.3	98.8	P/P	40 - 150
2334980	Dinotefuran	101	109	P/P	40 - 150
2334980	Diuron	77.2	76.5	P/P	40 - 150
2334980	Fenuron	84.0	87.8	P/P	40 - 150
2334980	Fluridone	76.7	80.2	P/P	40 - 150
2334980	Hydrocodone	85.0	87.4	P/P	40 - 150
2334980	Ibuprofen	64.6	71.6	P/P	40 - 150
2334980	Imazapyr	84.3	82.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P415325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334980	Imidacloprid	110	125	P/P	40 - 150
2334980	Linuron	80.6	83.0	P/P	40 - 150
2334980	Mandestrobin	75.8	82.0	P/P	40 - 150
2334980	MCPP	67.5	67.5	P/P	40 - 150
2334980	Naproxen	67.9	87.3	P/P	40 - 150
2334980	Primidone	77.3	104	P/P	40 - 150
2334980	Pyraclostrobin	76.0	78.5	P/P	40 - 150
2334980	Silvex	60.5	60.9	P/P	40 - 150
2334980	Thiamethoxam	95.4	96.2	P/P	40 - 150
2334980	Tolfenpyrad	45.9	47.1	P/P	30 - 150
2334980	Triclopyr	45.5	48.2	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P415517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335341	Acesulfame K	80.6	79.9	P/P	40 - 150
2335341	AMPA	104	100	P/P	40 - 150
2335341	Endothall	108	112	P/P	40 - 150
2335341	Glufosinate	94.8	97.4	P/P	40 - 150
2335341	Glyphosate	87.7	94.8	P/P	40 - 150
2335341	Sucralose	94.0	96.9	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P415771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335661	Fluoride	99.9	99.9	P/P	94 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333620	Fluoride	99.0	99.0	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P415533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335222	Organic Carbon	97.2	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335320	Turbidity	3.65	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335142	Ammonia-N	3.92	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334733	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	2.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337061	NO2NO3-N	0.546	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335950	NO2NO3-N	2.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335406	Total-P	0.489	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P415325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334980	2,4-D	1.79	Spike	P	0 - 30
2334980	2,4,5-T	8.96	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P415325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334980	Acetaminophen	2.89	Spike	P	0 - 30
2334980	Acetamiprid	2.93	Spike	P	0 - 30
2334980	Afidopyropen	10.8	Spike	P	0 - 30
2334980	Bentazon	0.430	Spike	P	0 - 30
2334980	Benzovindiflupyr	5.48	Spike	P	0 - 30
2334980	Carbamazepine	4.98	Spike	P	0 - 30
2334980	Clothianidin	18.2	Spike	P	0 - 30
2334980	Dinotefuran	7.60	Spike	P	0 - 30
2334980	Diuron	0.987	Spike	P	0 - 30
2334980	Fenuron	4.43	Spike	P	0 - 30
2334980	Fluridone	4.51	Spike	P	0 - 30
2334980	Hydrocodone	2.89	Spike	P	0 - 30
2334980	Ibuprofen	10.3	Spike	P	0 - 30
2334980	Imazapyr	2.45	Spike	P	0 - 30
2334980	Imidacloprid	10.7	Spike	P	0 - 30
2334980	Linuron	2.99	Spike	P	0 - 30
2334980	Mandestrobin	7.77	Spike	P	0 - 30
2334980	MCPP	0.125	Spike	P	0 - 30
2334980	Naproxen	25.0	Spike	P	0 - 30
2334980	Primidone	29.1	Spike	P	0 - 30
2334980	Pyraclostrobin	3.24	Spike	P	0 - 30
2334980	Silvex	0.733	Spike	P	0 - 30
2334980	Thiamethoxam	0.838	Spike	P	0 - 30
2334980	Tolfenpyrad	2.65	Spike	P	0 - 30
2334980	Triclopyr	5.77	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P415517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335341	Acesulfame K	0.916	Spike	P	0 - 30
2335341	AMPA	3.24	Spike	P	0 - 30
2335341	Endothall	3.05	Spike	P	0 - 30
2335341	Glufosinate	2.62	Spike	P	0 - 30
2335341	Glyphosate	7.05	Spike	P	0 - 30
2335341	Sucralose	2.98	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P415767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335661	Total Alkalinity	0.256	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P415769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335322	Total Alkalinity	0.391	Sample	P	0 - 3.8

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P415771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335661	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333620	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335222	Organic Carbon	1.00	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2335429

Field Sample ID: G3NW0124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	95.7	P	30 - 160
EPA 8321B	Endothall-d6	35.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	68.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.8	P	30 - 160
EPA 8321B	Primidone-d5	87.4	P	30 - 160
EPA 8321B	Sucralose-d6	91.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112901

Included Lab Sample IDs: 2335404, 2335405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A112972

Included Lab Sample IDs: 2335406, 2335407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112975

Included Lab Sample IDs: 2335429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.3	99.8	P/P	50 - 150
2,4,5-T	112	99.7	P/P	50 - 150
Acetaminophen	104	105	P/P	60 - 160
Acetamiprid	99.2	103	P/P	50 - 150
Afidopyropen	97.4	107	P/P	50 - 150
Bentazon	105	87.7	P/P	50 - 160
Benzovindiflupyr	104	99.4	P/P	50 - 150
Carbamazepine	103	103	P/P	60 - 150
Clothianidin	112	104	P/P	60 - 150
Dinotefuran	99.9	107	P/P	50 - 150
Diuron	81.0	104	P/P	60 - 160
Fenuron	95.2	95.7	P/P	60 - 150
Fluridone	106	102	P/P	60 - 160
Hydrocodone	95.9	108	P/P	60 - 150
Ibuprofen	93.5	82.8	P/P	50 - 160
Imazapyr	93.5	91.2	P/P	50 - 150
Imidacloprid	104	100	P/P	60 - 150
Linuron	103	108	P/P	60 - 150
Mandestrobin	98.4	102	P/P	50 - 150
MCPP	101	103	P/P	50 - 150
Naproxen	147	113	P/P	50 - 160
Primidone	102	120	P/P	60 - 150
Pyraclostrobin	99.9	102	P/P	60 - 150
Silvex	104	94.7	P/P	50 - 150
Thiamethoxam	101	101	P/P	50 - 150
Tolfenpyrad	90.8	98.9	P/P	60 - 150
Triclopyr	107	98.5	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A113016

Included Lab Sample IDs: 2335429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	101	P/P	60 - 160
Endothall	106	81.9	P/P	60 - 160
Glufosinate	92.2	84.0	P/P	60 - 160
Glyphosate	102	101	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A113044
Included Lab Sample IDs: 2335429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.6	74.1	P/P	60 - 160
Sucralose	94.9	93.9	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A113067
Included Lab Sample IDs: 2335404, 2335405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.8	P/P	90 - 110
Total Alkalinity	100	97.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113067
Included Lab Sample IDs: 2335404, 2335405

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113104
Included Lab Sample IDs: 2335406, 2335407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113114
Included Lab Sample IDs: 2335407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	94.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113146
Included Lab Sample IDs: 2335406

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113163
Included Lab Sample IDs: 2335407

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113208

Included Lab Sample IDs: 2335406, 2335407

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113298

Included Lab Sample IDs: 2335406

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity	98.0				3.65	
EPA 350.1 Rev. 2.0	Ammonia-N	91.6	100	104			3.92
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	108	107			1.16
	Kjeldahl Nitrogen	105	110	106			2.46
EPA 353.2 Rev. 2.0	NO2NO3-N	95.0	91.4	91.9			0.546
	NO2NO3-N	103	100	103			2.84
EPA 365.1 Rev. 2.0	Total-P	102	102	103			0.489
EPA 8321B	2,4-D	86.9	85.8	84.3			1.79
	2,4,5-T	47.0	41.5	45.4			8.96
	Acesulfame K	86.3	80.6	79.9			0.916
	Acetaminophen	79.8	94.0	96.8			2.89
	Acetamiprid	92.7	83.6	81.2			2.93
	Afidopyropen	70.5	64.9	72.3			10.8
	AMPA	107	104	100			3.24
	Bentazon	73.6	60.1	60.3			0.430
	Benzovindiflupyr	85.1	82.1	77.7			5.48
	Carbamazepine	90.6	86.4	91.9			4.98
	Clothianidin	95.3	82.3	98.8			18.2
	Dinotefuran	91.8	101	109			7.60
	Diuron	92.1	77.2	76.5			0.987
	Endothall	105	108	112			3.05
	Fenuron	87.9	84.0	87.8			4.43
	Fluridone	81.0	76.7	80.2			4.51
	Glufosinate	117	94.8	97.4			2.62
	Glyphosate	101	87.7	94.8			7.05
	Hydrocodone	89.4	85.0	87.4			2.89
	Ibuprofen	61.2	64.6	71.6			10.3
	Imazapyr	86.4	84.3	82.3			2.45
	Imidacloprid	92.6	110	125			10.7
	Linuron	85.9	80.6	83.0			2.99
	Mandestrobin	83.0	75.8	82.0			7.77
	MCPP	77.3	67.5	67.5			0.125
	Naproxen	69.4	67.9	87.3			25.0
	Primidone	93.0	77.3	104			29.1
	Pyraclostrobin	75.8	76.0	78.5			3.24
	Silvex	55.4	60.5	60.9			0.733
	Sucralose	97.2	94.0	96.9			2.98
	Thiamethoxam	85.7	95.4	96.2			0.838
	Tolfenpyrad	46.7	45.9	47.1			2.65
	Triclopyr	52.7	45.5	48.2			5.77
SM 2320 B-2011	Total Alkalinity	101				0.256	
	Total Alkalinity	102				0.391	
SM 4500-F- C-2011	Fluoride	99.9	99.9	99.9			0.0
	Fluoride	98.9	99.0	99.0			0.0
SM 5310 B-2011	Organic Carbon	94.8	97.2	98.4			1.00

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2335404, 2335405
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2335406, 2335407
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2335406, 2335407
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2335406, 2335407

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2335406, 2335407
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2335429
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2335404, 2335405
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2335404, 2335405
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2335404, 2335405
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2335406, 2335407

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	06/17/2022			06/17/2022 14:14	Khloe J Berg	2335404
	06/17/2022			06/17/2022 14:15	Khloe J Berg	2335405
EPA 350.1 Rev. 2.0	06/17/2022			06/27/2022 11:44	Judith K. Clark	2335406
	06/17/2022			06/27/2022 11:45	Judith K. Clark	2335407
EPA 351.2 Rev. 2.0	06/17/2022	06/27/2022 14:35	Samantha L Bates	06/28/2022 12:27	Alexandra J Mattheus	2335406
	06/17/2022	06/28/2022 15:50	Samantha L Bates	06/29/2022 13:09	Alexandra J Mattheus	2335407
EPA 353.2 Rev. 2.0	06/17/2022			06/27/2022 15:31	Touraj Touran	2335407
	06/17/2022			07/05/2022 14:53	Touraj Touran	2335406
EPA 365.1 Rev. 2.0	06/17/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 14:05	James L Waggeberby	2335406
	06/17/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 14:17	James L Waggeberby	2335407
EPA 8321B	06/17/2022	06/21/2022 09:00	June Rhew	06/22/2022 04:08	Juyoung Kim	2335429
	06/17/2022	06/22/2022 12:00	Umesh Chiluwal	06/22/2022 13:50	Umesh Chiluwal	2335429
	06/17/2022	06/22/2022 12:00	Umesh Chiluwal	06/22/2022 18:10	Umesh Chiluwal	2335429
	06/17/2022	06/22/2022 12:00	Umesh Chiluwal	06/23/2022 08:06	Umesh Chiluwal	2335429
SM 2320 B-2011	06/17/2022			06/25/2022 07:59	Dale L. Simmons	2335405
	06/17/2022			06/25/2022 18:45	Dale L. Simmons	2335404
SM 2540 D-2011	06/17/2022			06/21/2022 14:32	Yijie Li	2335404, 2335405
SM 4500-F- C-2011	06/17/2022			06/25/2022 07:59	Dale L. Simmons	2335405
	06/17/2022			06/25/2022 16:08	Dale L. Simmons	2335404
SM 5310 B-2011	06/17/2022			06/21/2022 20:10	Khloe J Berg	2335406
	06/17/2022			06/21/2022 20:25	Khloe J Berg	2335407