

Chemical Analysis Report

NE-DIST-2021-07-01-01

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

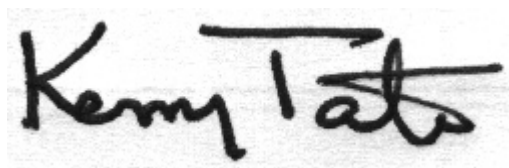
Event Description: **Lake Alice LVI**
Request ID: **RQ-2021-06-28-14**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 26-JUL-2021 10:06

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first 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: Lake Alice Center

Collection Date/Time: 06/30/2021 10:30

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258554	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P400482	
	EPA 300.0 Rev. 2.1	Chloride	9.6		mg Cl/L	P400720	
		Sulfate	12		mg SO4/L	P400722	
		Color (true)	43	A	PCU	P400486	
	SM 2320 B-2011	Total Alkalinity	54		mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	99	A	mg/L	P400832	
	SM 2540 D-2011	TSS	3	IA	mg/L	P400835	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P400786	
2258555	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P401323	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P400591	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400513	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P400576	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P400823	
2258556	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.39		mg P/L	P400465	
2258561	EPA 8276	Chlordane	5.1	U	ng/L	P400511	
		Toxaphene	31	U	ng/L	P400511	
2258562	EPA 8321B	2,4-D	0.22		ug/L	P400469	
		Acesulfame K	0.10	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400469	
		AMPA	0.28	I	ug/L	P400314	
		Acetaminophen	0.0080	U	ug/L	P400469	
		Acetamiprid	0.0020	U	ug/L	P400469	
		Endothall	0.25	U	ug/L	P400314	
		Glufosinate	0.10	U	ug/L	P400314	
		Glyphosate	0.37	I	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400469	
		Bentazon	8.0E-04	U	ug/L	P400469	
		Sucralose	0.35		ug/L	P400314	
		Benzovindiflupyr	0.0020	U	ug/L	P400469	
		Carbamazepine	9.9E-04	I	ug/L	P400469	
		Clothianidin	0.0041	I	ug/L	P400469	
		Dinotefuran	0.0020	U	ug/L	P400469	
		Diuron	0.014		ug/L	P400469	
		Fenuron	0.016	U	ug/L	P400469	
		Fluridone	0.010		ug/L	P400469	
		Imazapyr	0.91		ug/L	P400469	
		Hydrocodone	0.0020	U	ug/L	P400469	
		Ibuprofen	0.020	U	ug/L	P400469	
		Imidacloprid	0.0055	I	ug/L	P400469	MS
		Linuron	0.0040	U	ug/L	P400469	
		Mandestrobin	0.0020	U	ug/L	P400469	
		MCPP	0.0020	U	ug/L	P400469	
		Naproxen	0.0080	U	ug/L	P400469	

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258562	EPA 8321B	Primidone	0.0040	U	ug/L	P400469	
		Pyraclostrobin	0.0020	U	ug/L	P400469	
		Thiamethoxam	0.0020	U	ug/L	P400469	MS
		Tolfenpyrad	0.0020	U	ug/L	P400469	
		Triclopyr	0.0040	U	ug/L	P400469	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FB_06302021

Collection Date/Time: 06/30/2021 10:45

Field ID: FB_06302021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258557	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P400482	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P400720	
		Sulfate	0.20	U	mg SO4/L	P400722	
		Color (true)	2.5	U	PCU	P400486	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	15	U	mg/L	P400831	
	SM 2540 D-2011	TSS	2	U	mg/L	P400834	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400786	
2258558	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P401232	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P400591	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400513	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P400577	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P400823	
2258559	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400465	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: 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: P400482

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400720

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400722

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401232

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400591

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400513

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400576

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400577

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400465

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8276
Batch ID: P400511

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P400314

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: P400469

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	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P400486

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P400782

Component	Result	Code	Units
Total Alkalinity	0.72	I	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P400831

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P400832

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400834

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400835

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P400823

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400720

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400722

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401232

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

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: P400591

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400513

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400576

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400577

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400465

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P400511

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	74.8	85.9	P/P	47 - 128
Toxaphene	57.5	71.7	P/P	11 - 163

Reference Method: EPA 8321B
Batch ID: P400314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.8		P	40 - 150
AMPA	97.0		P	40 - 150
Endothall	97.7		P	40 - 150
Glufosinate	93.3		P	40 - 150
Glyphosate	96.5		P	40 - 150
Sucralose	85.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P400469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	88.8		P	40 - 150
Acetaminophen	91.0		P	30 - 150
Acetamiprid	75.9		P	40 - 150
Afidopyropen	78.3		P	40 - 150
Bentazon	115		P	30 - 150
Benzovindiflupyr	83.0		P	40 - 150
Carbamazepine	90.2		P	40 - 150
Clothianidin	88.8		P	40 - 150
Dinotefuran	82.7		P	40 - 150
Diuron	73.3		P	40 - 150
Fenuron	87.3		P	40 - 150
Fluridone	87.1		P	40 - 150
Hydrocodone	81.5		P	40 - 150
Ibuprofen	85.2		P	40 - 150
Imazapyr	92.9		P	40 - 150
Imidacloprid	94.3		P	40 - 150
Linuron	64.3		P	40 - 150
Mandestrobin	79.4		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	123		P	40 - 150
Primidone	62.4		P	40 - 150
Pyraclostrobin	80.5		P	40 - 150
Thiamethoxam	93.4		P	40 - 150
Tolfenpyrad	50.5		P	30 - 150
Triclopyr	87.2		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P400486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P400782

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

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258506	Chloride	97.6		P	90 - 110
2258641	Chloride	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258641	Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401232

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258555	Ammonia-N	95.4	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260508	Ammonia-N	98.2	91.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258470	Kjeldahl Nitrogen	107	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258500	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258498	Total-P	107	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258568	O-Phosphate-P	94.7	95.6	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P400511

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259760	Chlordane	83.2	99.0	P/P	47 - 128
2259760	Toxaphene	77.1	78.6	P/P	11 - 163

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P400314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257607	Acesulfame K	78.8	87.6	P/P	40 - 150
2257607	AMPA	85.0	82.9	P/P	40 - 150
2257607	Endothall	93.9	93.7	P/P	40 - 150
2257607	Glufosinate	86.9	89.2	P/P	40 - 150
2257607	Glyphosate	91.4	82.6	P/P	40 - 150
2257607	Sucralose	80.9	85.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P400469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258016	2,4-D	111	115	P/P	40 - 150
2258016	2,4,5-T	118	102	P/P	40 - 150
2258016	Acetaminophen	125	106	P/P	30 - 150
2258016	Acetamiprid	96.2	76.6	P/P	40 - 150
2258016	Afidopyropen	43.0	40.8	P/P	40 - 150
2258016	Bentazon	88.1	84.4	P/P	30 - 150
2258016	Benzovindiflupyr	80.1	64.9	P/P	40 - 150
2258016	Carbamazepine	105	98.4	P/P	40 - 150
2258016	Clothianidin	125	117	P/P	40 - 150
2258016	Dinotefuran	127	105	P/P	40 - 150
2258016	Diuron	87.6	80.3	P/P	40 - 150
2258016	Fenuron	90.1	84.1	P/P	40 - 150
2258016	Fluridone	84.7	76.1	P/P	40 - 150
2258016	Hydrocodone	118	106	P/P	40 - 150
2258016	Ibuprofen	75.0	81.1	P/P	40 - 150
2258016	Imazapyr	149	128	P/P	40 - 150
2258016	Imidacloprid	206	191	F/F	40 - 150
2258016	Linuron	86.5	74.3	P/P	40 - 150
2258016	Mandestrobin	86.5	81.5	P/P	40 - 150
2258016	MCPP	131	107	P/P	40 - 150
2258016	Naproxen	131	128	P/P	40 - 150
2258016	Primidone	98.1	104	P/P	40 - 150
2258016	Pyraclostrobin	76.2	67.4	P/P	40 - 150
2258016	Thiamethoxam	174	153	F/F	40 - 150
2258016	Tolfenpyrad	58.5	53.5	P/P	30 - 150
2258016	Triclopyr	119	110	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258566	Fluoride	99.4	98.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P400823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258555	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258548	Turbidity	0.396	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258506	Chloride	0.669	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401232

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258555	Ammonia-N	1.80	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260508	Ammonia-N	4.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258470	Kjeldahl Nitrogen	1.67	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258500	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258498	Total-P	3.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258642	Total-P	1.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258568	O-Phosphate-P	0.946	Spike	P	0 - 20

Reference Method: EPA 8276
Batch ID: P400511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259760	Chlordane	17.3	Spike	P	0 - 30
2259760	Toxaphene	1.83	Spike	P	0 - 30
LFB	Chlordane	13.8	LCS	P	0 - 30
LFB	Toxaphene	22.0	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P400314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257607	Acesulfame K	9.91	Spike	P	0 - 30
2257607	AMPA	2.21	Spike	P	0 - 30
2257607	Endothall	0.197	Spike	P	0 - 30
2257607	Glufosinate	2.64	Spike	P	0 - 30
2257607	Glyphosate	9.03	Spike	P	0 - 30
2257607	Sucralose	5.32	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P400469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258016	2,4-D	3.51	Spike	P	0 - 30
2258016	2,4,5-T	15.0	Spike	P	0 - 30
2258016	Acetaminophen	15.9	Spike	P	0 - 30
2258016	Acetamiprid	22.6	Spike	P	0 - 30
2258016	Afidopyropen	5.24	Spike	P	0 - 30
2258016	Bentazon	4.36	Spike	P	0 - 30
2258016	Benzovindiflupyr	21.0	Spike	P	0 - 30
2258016	Carbamazepine	6.92	Spike	P	0 - 30
2258016	Clothianidin	6.15	Spike	P	0 - 30
2258016	Dinotefuran	19.0	Spike	P	0 - 30
2258016	Diuron	8.61	Spike	P	0 - 30
2258016	Fenuron	6.91	Spike	P	0 - 30
2258016	Fluridone	10.7	Spike	P	0 - 30
2258016	Hydrocodone	11.3	Spike	P	0 - 30
2258016	Ibuprofen	7.81	Spike	P	0 - 30
2258016	Imazapyr	14.0	Spike	P	0 - 30
2258016	Imidacloprid	5.16	Spike	P	0 - 30
2258016	Linuron	15.1	Spike	P	0 - 30
2258016	Mandestrobin	5.98	Spike	P	0 - 30
2258016	MCP	19.7	Spike	P	0 - 30
2258016	Naproxen	2.81	Spike	P	0 - 30
2258016	Primidone	6.22	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P400469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258016	Pyraclostrobin	12.3	Spike	P	0 - 30
2258016	Thiamethoxam	13.0	Spike	P	0 - 30
2258016	Tolfenpyrad	8.86	Spike	P	0 - 30
2258016	Triclopyr	7.54	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P400486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258554	Color (true)	1.97	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P400782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258566	Total Alkalinity	1.54	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P400831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258506	TDS	4.82	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P400832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258554	TDS	3.02	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P400834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258506	TSS	6.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258566	Fluoride	0.506	Spike	P	0 - 2.1

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P400823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258555	Organic Carbon	0.558	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2258561
Field Sample ID: 20020052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	66.6	P	29 - 92.0
EPA 8276	PCNB	99.2	P	43 - 134

Lab Sample ID: 2258562
Field Sample ID: 20020052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	147	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	94.1	P	30 - 160
EPA 8321B	Endothall-d6	74.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	30 - 160
EPA 8321B	Ibuprofen-d3	80.7	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	78.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106399

Included Lab Sample IDs: 2258556, 2258559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A106404

Included Lab Sample IDs: 2258562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	75.1	84.8	P/P	60 - 160
Glufosinate	78.5	84.8	P/P	60 - 160
Glyphosate	84.5	86.1	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106410

Included Lab Sample IDs: 2258554, 2258557

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

Reference Method: SM 2120 B-2011

Run ID: A106412

Included Lab Sample IDs: 2258554, 2258557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106426

Included Lab Sample IDs: 2258555, 2258558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A106461

Included Lab Sample IDs: 2258562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.4	77.8	P/P	60 - 160
Endothall	71.1	75.1	P/P	60 - 160
Sucralose	75.8	71.0	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106471

Included Lab Sample IDs: 2258555

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106481

Included Lab Sample IDs: 2258554, 2258557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.8	P/P	90 - 110
Sulfate	98.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106482

Included Lab Sample IDs: 2258558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A106497

Included Lab Sample IDs: 2258562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	98.0	P/P	50 - 150
2,4,5-T	94.1	91.4	P/P	50 - 150
Acetaminophen	98.2	99.4	P/P	60 - 160
Acetamiprid	102	106	P/P	50 - 150
Afidopyropen	116	95.9	P/P	50 - 150
Bentazon	119	108	P/P	50 - 160
Benzovindiflupyr	109	95.7	P/P	50 - 150
Carbamazepine	100	101	P/P	60 - 150
Clothianidin	108	101	P/P	60 - 150
Dinotefuran	103	107	P/P	50 - 150
Diuron	109	109	P/P	60 - 160
Fenuron	91.5	96.6	P/P	60 - 150
Fluridone	106	103	P/P	60 - 160
Hydrocodone	109	104	P/P	60 - 150
Ibuprofen	83.6	92.8	P/P	50 - 160
Imidacloprid	99.7	104	P/P	60 - 150
Linuron	86.4	107	P/P	60 - 150
Mandestrobin	104	102	P/P	50 - 150
MCP	99.8	99.6	P/P	50 - 150
Naproxen	114	158	P/P	50 - 160
Primidone	83.0	96.9	P/P	60 - 150
Pyraclostrobin	100	105	P/P	60 - 150
Thiamethoxam	105	108	P/P	50 - 150
Tolfenpyrad	92.3	98.7	P/P	60 - 150
Triclopyr	96.3	95.5	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106502

Included Lab Sample IDs: 2258555, 2258558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A106532
Included Lab Sample IDs: 2258561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	94.4		P	80 - 120
Toxaphene	82.5		P	80 - 120

Reference Method: SM 2320 B-2011
Run ID: A106546
Included Lab Sample IDs: 2258554, 2258557

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

Reference Method: SM 4500 F-C-2011
Run ID: A106546
Included Lab Sample IDs: 2258554, 2258557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A106555
Included Lab Sample IDs: 2258562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	95.5	95.8	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A106565
Included Lab Sample IDs: 2258555, 2258558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.2	P/P	90 - 110
Organic Carbon	99.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A106712
Included Lab Sample IDs: 2258558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A106748
Included Lab Sample IDs: 2258555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.0	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						0.396	
EPA 300.0 Rev. 2.1	Chloride	96.6		97.6	96.7		0.669	
	Sulfate	96.6		95.9				
EPA 350.1 Rev. 2.0	Ammonia-N	99.8		95.4	97.4			1.80
	Ammonia-N	99.6		98.2	91.2			4.59
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110		107	109			1.67
EPA 353.2 Rev. 2.0	NO2NO3-N	100		100	101			0.496
EPA 365.1 Rev. 2.0	Total-P	105		107	104			3.04
	Total-P	103						1.04
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100		94.7	95.6			0.946
EPA 8276	Chlordane	74.8	85.9	83.2	99.0	13.8		17.3
	Toxaphene	57.5	71.7	77.1	78.6	22.0		1.83
EPA 8321B	2,4-D	102		111	115			3.51
	2,4,5-T	88.8		118	102			15.0
	Acesulfame K	89.8		78.8	87.6			9.91
	Acetaminophen	91.0		125	106			15.9
	Acetamiprid	75.9		96.2	76.6			22.6
	Afidopyropen	78.3		43.0	40.8			5.24
	AMPA	97.0		85.0	82.9			2.21
	Bentazon	115		88.1	84.4			4.36
	Benzovindiflupyr	83.0		80.1	64.9			21.0
	Carbamazepine	90.2		105	98.4			6.92
	Clothianidin	88.8		125	117			6.15
	Dinotefuran	82.7		127	105			19.0
	Diuron	73.3		87.6	80.3			8.61
	Endothall	97.7		93.9	93.7			0.197
	Fenuron	87.3		90.1	84.1			6.91
	Fluridone	87.1		84.7	76.1			10.7
	Glufosinate	93.3		86.9	89.2			2.64
	Glyphosate	96.5		91.4	82.6			9.03
	Hydrocodone	81.5		118	106			11.3
	Ibuprofen	85.2		75.0	81.1			7.81
	Imazapyr	92.9		149	128			14.0
	Imidacloprid	94.3		206	191			5.16
	Linuron	64.3		86.5	74.3			15.1
	Mandestrobin	79.4		86.5	81.5			5.98
	MCPP	113		131	107			19.7
	Naproxen	123		131	128			2.81
	Primidone	62.4		98.1	104			6.22
	Pyraclostrobin	80.5		76.2	67.4			12.3
	Sucralose	85.2		80.9	85.6			5.32
	Thiamethoxam	93.4		174	153			13.0
	Tolfenpyrad	50.5		58.5	53.5			8.86
	Triclopyr	87.2		119	110			7.54
SM 2120 B-2011	Color (true)	98.6					1.97	
SM 2320 B-2011	Total Alkalinity	102					1.54	
SM 2540 C-2011	TDS						4.82	
	TDS						3.02	
SM 2540 D-2011	TSS						6.67	
SM 4500 F-C-2011	Fluoride	100		99.4	98.8			0.506
SM 5310 B-2011	Organic Carbon	99.4		101	102			0.558

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2258554, 2258557
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2258554, 2258557
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2258554, 2258557
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2258555, 2258558
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2258555, 2258558
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2258555, 2258558
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2258555, 2258558
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2258556, 2258559
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2258561
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2258562
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2258554, 2258557
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2258554, 2258557
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2258554, 2258557
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2258554, 2258557
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2258554, 2258557
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2258555, 2258558

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	07/01/2021			07/01/2021 16:21	Sarah A Nixon	2258554, 2258557
EPA 300.0 Rev. 2.1	07/01/2021			07/08/2021 22:31	Lipi Saha	2258554
	07/01/2021			07/08/2021 22:43	Lipi Saha	2258557
EPA 350.1 Rev. 2.0	07/01/2021			07/20/2021 13:21	Roberta Tatti	2258558
	07/01/2021			07/21/2021 13:51	Roberta Tatti	2258555
EPA 351.2 Rev. 2.0	07/01/2021	07/06/2021 14:25	Benjamin T. Nordmann	07/07/2021 18:52	Letuzia M De Oliveira	2258558
	07/01/2021	07/06/2021 14:25	Benjamin T. Nordmann	07/07/2021 18:54	Letuzia M De Oliveira	2258555
EPA 353.2 Rev. 2.0	07/01/2021			07/02/2021 09:08	Beverly Y. Sanders	2258555
	07/01/2021			07/02/2021 09:09	Beverly Y. Sanders	2258558
EPA 365.1 Rev. 2.0	07/01/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 08:53	Shengyu Ding	2258555
	07/01/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 13:02	Shengyu Ding	2258558
EPA 365.1 Rev. 2.0 dissolved	07/01/2021			07/01/2021 15:15	Ping Hua	2258556
	07/01/2021			07/01/2021 15:18	Ping Hua	2258559
EPA 8276	07/01/2021	07/06/2021 08:00	Fe-Val Siddell	07/09/2021 08:09	Chiran X. Ghimire	2258561
EPA 8321B	07/01/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 20:08	Juyoung Kim	2258562
	07/01/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 14:19	Pramila Ghimire	2258562
	07/01/2021	07/02/2021 14:00	Hoor Shaik	07/07/2021 20:20	Juyoung Kim	2258562
	07/01/2021	07/02/2021 14:00	Hoor Shaik	07/10/2021 00:31	Juyoung Kim	2258562
SM 2120 B-2011	07/01/2021			07/01/2021 16:52	Sarah A Nixon	2258554
	07/01/2021			07/01/2021 16:53	Sarah A Nixon	2258557
SM 2320 B-2011	07/01/2021			07/10/2021 07:56	Dale L. Simmons	2258554
	07/01/2021			07/10/2021 08:05	Dale L. Simmons	2258557
SM 2540 C-2011	07/01/2021			07/06/2021 14:08	Yijie Li	2258554, 2258557
SM 2540 D-2011	07/01/2021			07/06/2021 14:08	Yijie Li	2258554, 2258557
SM 4500 F-C-2011	07/01/2021			07/10/2021 07:56	Dale L. Simmons	2258554
	07/01/2021			07/10/2021 08:05	Dale L. Simmons	2258557
SM 5310 B-2011	07/01/2021			07/10/2021 01:42	Madeline Gruver	2258555
	07/01/2021			07/10/2021 03:57	Madeline Gruver	2258558