

Chemical Analysis Report

CEN-DIST-2020-06-25-01

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

Event Description: **Lake Weohyakapka**
Request ID: **RQ-2020-06-22-60**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUL-2020 09:31

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Lake Weohyakapka @ Center

Collection Date/Time: 06/24/2020 11:57

Field ID: G4CE0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2178748	EPA 180.1 Rev. 2.0	Turbidity	5.5	A	NTU	P383695	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P383969	
		Sulfate	16		mg SO4/L	P383973	
	SM 2120 B-2011	Color (true)	40	A	PCU	P383696	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P383781	
	SM 2540 C-2011	TDS	101		mg/L	P383893	
	SM 2540 D-2011	TSS	8	I	mg/L	P383827	
	SM 4500 F-C-2011	Fluoride	0.075	I	mg F/L	P383784	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P383771	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P383881	
2178749	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383800	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P383813	
	SM 5310 B-2011	Organic Carbon	9.7		mg C/L	P383902	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.005	I	mg P/L	P383748	
	dissolved						
2178752	EPA 8321B	2,4-D	0.0020	U	ug/L	P383612	
		Acesulfame K**	0.10	U	ug/L	P383676	
		AMPA**	0.10	U	ug/L	P383676	
		Sucralose**	0.033	I	ug/L	P383676	
		Acetaminophen**	0.0080	U	ug/L	P383612	
		Acetamiprid**	0.0020	U	ug/L	P383612	
		Endothall**	0.25	U	ug/L	P383676	
		Glufosinate**	0.10	U	ug/L	P383676	
		Glyphosate**	0.10	U	ug/L	P383676	
		Afidopyropen**	0.0020	U	ug/L	P383612	
		Bentazon	8.0E-04	U	ug/L	P383612	
		Benzovindiflupyr**	0.0020	U	ug/L	P383612	
		Carbamazepine**	8.0E-04	U	ug/L	P383612	
		Clothianidin**	0.0020	U	ug/L	P383612	
		Dinotefuran**	0.0020	U	ug/L	P383612	
		Diuron	0.0020	U	ug/L	P383612	
		Fenuron	0.033	I	ug/L	P383612	
		Fluridone**	0.017		ug/L	P383612	
		Imazapyr**	0.0040	U	ug/L	P383612	
		Hydrocodone**	0.0020	U	ug/L	P383612	
		Ibuprofen**	0.020	U	ug/L	P383612	
		Imidacloprid	0.0020	U	ug/L	P383612	
		Linuron	0.0040	U	ug/L	P383612	
		Mandestrobin**	0.0020	U	ug/L	P383612	
		MCP	0.0020	U	ug/L	P383612	
		Naproxen**	0.0080	U	ug/L	P383612	
		Primidone**	0.0040	U	ug/L	P383612	
		Pyraclostrobin**	0.0020	U	ug/L	P383612	
		Thiamethoxam**	0.0020	U	ug/L	P383612	

Field ID: G4CE0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2178752	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P383612	
		Triclopyr**	0.0040	U	ug/L	P383612	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low 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.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383695

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383969

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383973

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383771

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383881

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383800

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383813

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383748

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

Reference Method: EPA 8321B
Batch ID: P383612

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P383612

Component	Result	Code	Units
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

Reference Method: EPA 8321B
Batch ID: P383676

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 2120 B-2011
Batch ID: P383696

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383781

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P383893

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P383827

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383784

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P383902

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: P383969

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P383973

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P383771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P383881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P383800

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383813

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: P383748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P383612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	30 - 160
Acetaminophen	76.7		P	30 - 160
Acetamiprid	77.4		P	30 - 160
Afidopyropen	58.1		P	30 - 160
Bentazon	56.3		P	30 - 160
Benzovindiflupyr	58.9		P	30 - 160
Carbamazepine	62.1		P	30 - 160
Clothianidin	86.7		P	30 - 160
Dinotefuran	87.2		P	30 - 160
Diuron	56.4		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P383612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	103		P	30 - 160
Fluridone	73.6		P	30 - 160
Hydrocodone	89.8		P	30 - 160
Ibuprofen	55.9		P	30 - 160
Imazapyr	78.8		P	30 - 160
Imidacloprid	92.9		P	30 - 160
Linuron	54.6		P	30 - 160
Mandestrobin	66.7		P	30 - 160
MCPP	110		P	30 - 160
Naproxen	58.2		P	30 - 160
Primidone	82.1		P	30 - 160
Pyraclostrobin	59.0		P	30 - 160
Thiamethoxam	78.9		P	30 - 160
Tolfenpyrad	44.7		P	30 - 160
Triclopyr	75.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P383676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
AMPA	113		P	40 - 150
Endothall	79.9		P	40 - 150
Glufosinate	115		P	40 - 150
Glyphosate	90.6		P	40 - 140
Sucralose	75.9		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P383696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383784

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383902

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178462	Chloride	103		P	90 - 110
2178597	Chloride	110		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178462	Sulfate	105		P	90 - 110
2178597	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178741	Ammonia-N	99.2	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178772	Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178661	NO2NO3-N	97.2	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178749	Total-P	103	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178642	O-Phosphate-P	94.7	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177972	2,4-D	117	106	P/P	30 - 160
2177972	Acetaminophen	107	97.5	P/P	30 - 160
2177972	Acetamiprid	85.6	75.7	P/P	30 - 160
2177972	Afidopyropen	69.1	62.5	P/P	30 - 160
2177972	Benzovindiflupyr	74.2	73.6	P/P	30 - 160
2177972	Carbamazepine	72.7	68.4	P/P	30 - 160
2177972	Clothianidin	111	99.8	P/P	30 - 160
2177972	Dinotefuran	111	104	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P383612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177972	Diuron	63.6	59.3	P/P	30 - 160
2177972	Fenuron	103	94.5	P/P	30 - 160
2177972	Fluridone	84.8	84.8	P/P	30 - 160
2177972	Hydrocodone	102	88.1	P/P	30 - 160
2177972	Ibuprofen	73.2	69.5	P/P	30 - 160
2177972	Imazapyr	103	95.6	P/P	30 - 160
2177972	Imidacloprid	150	143	P/P	30 - 160
2177972	Linuron	63.7	60.3	P/P	30 - 160
2177972	Mandestrobin	68.7	74.2	P/P	30 - 160
2177972	MCP	132	126	P/P	30 - 160
2177972	Naproxen	103	116	P/P	30 - 160
2177972	Primidone	94.8	83.8	P/P	30 - 160
2177972	Pyraclostrobin	75.1	67.7	P/P	30 - 160
2177972	Thiamethoxam	106	98.4	P/P	30 - 160
2177972	Tolfenpyrad	41.7	35.9	P/P	30 - 160
2177972	Triclopyr	106	103	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P383676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178566	Acesulfame K	41.7	43.4	P/P	40 - 150
2178566	AMPA	116	120	P/P	40 - 150
2178566	Endothall	79.9	83.2	P/P	40 - 150
2178566	Glufosinate	95.9	90.4	P/P	40 - 150
2178566	Glyphosate	81.8	88.6	P/P	40 - 140
2178566	Sucralose	75.8	78.4	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P383784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178739	Fluoride	98.9	96.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2178646	Organic Carbon	108	110	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178748	Turbidity	1.45	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178597	Chloride	1.37	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178741	Ammonia-N	0.430	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178772	Kjeldahl Nitrogen	1.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178661	NO2NO3-N	0.468	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178749	Total-P	3.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178642	O-Phosphate-P	4.34	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P383612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177972	2,4-D	9.73	Spike	P	0 - 30
2177972	Acetaminophen	9.50	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P383612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177972	Acetamiprid	12.2	Spike	P	0 - 30
2177972	Afidopyropen	10.0	Spike	P	0 - 30
2177972	Bentazon	5.51	Spike	P	0 - 30
2177972	Benzovindiflupyr	0.733	Spike	P	0 - 30
2177972	Carbamazepine	6.17	Spike	P	0 - 30
2177972	Clothianidin	4.74	Spike	P	0 - 30
2177972	Dinotefuran	6.53	Spike	P	0 - 30
2177972	Diuron	6.97	Spike	P	0 - 30
2177972	Fenuron	8.96	Spike	P	0 - 30
2177972	Fluridone	0.0141	Spike	P	0 - 30
2177972	Hydrocodone	15.0	Spike	P	0 - 30
2177972	Ibuprofen	5.24	Spike	P	0 - 30
2177972	Imazapyr	6.62	Spike	P	0 - 30
2177972	Imidacloprid	3.59	Spike	P	0 - 30
2177972	Linuron	5.60	Spike	P	0 - 30
2177972	Mandestrobin	7.81	Spike	P	0 - 30
2177972	MCPP	4.74	Spike	P	0 - 30
2177972	Naproxen	12.1	Spike	P	0 - 30
2177972	Primidone	11.3	Spike	P	0 - 30
2177972	Pyraclostrobin	10.3	Spike	P	0 - 30
2177972	Thiamethoxam	7.08	Spike	P	0 - 30
2177972	Tolfenpyrad	14.9	Spike	P	0 - 30
2177972	Triclopyr	2.37	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P383676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178566	Acesulfame K	3.82	Spike	P	0 - 30
2178566	AMPA	2.57	Spike	P	0 - 30
2178566	Endothall	4.01	Spike	P	0 - 30
2178566	Glufosinate	5.99	Spike	P	0 - 30
2178566	Glyphosate	6.00	Spike	P	0 - 30
2178566	Sucralose	2.98	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P383696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178748	Color (true)	1.27	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178739	Total Alkalinity	1.61	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P383893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178739	TDS	0.702	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178739	Fluoride	1.97	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2178646	Organic Carbon	1.64	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2178752

Field Sample ID: G4CE0171

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	131	P	30 - 160
EPA 8321B	Acetaminophen-d4	64.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.7	P	30 - 160
EPA 8321B	Diuron-d6	55.8	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.2	P	30 - 160
EPA 8321B	Primidone-d5	75.3	P	30 - 160
EPA 8321B	Sucralose-d6	88.1	P	30 - 160
EPA 8321B	Sucralose-d6	88.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99526

Included Lab Sample IDs: 2178748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A99527

Included Lab Sample IDs: 2178748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	99.8	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99551

Included Lab Sample IDs: 2178750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.3	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99557

Included Lab Sample IDs: 2178749

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

Reference Method: SM 2320 B-2011

Run ID: A99560

Included Lab Sample IDs: 2178748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99560

Included Lab Sample IDs: 2178748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99570

Included Lab Sample IDs: 2178749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99572

Included Lab Sample IDs: 2178752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.0	75.9	P/P	50 - 150
Acetaminophen	115	117	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99572
Included Lab Sample IDs: 2178752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetamiprid	119	116	P/P	50 - 150
Afidopyropen	66.6	76.3	P/P	50 - 150
Bentazon	78.7	110	P/P	50 - 160
Benzovindiflupyr	92.8	92.4	P/P	50 - 150
Carbamazepine	102	104	P/P	60 - 150
Clothianidin	113	108	P/P	60 - 150
Dinotefuran	109	98.7	P/P	50 - 150
Diuron	90.1	91.7	P/P	60 - 160
Fenuron	75.0	68.3	P/P	60 - 150
Fluridone	95.6	99.1	P/P	60 - 160
Hydrocodone	121	119	P/P	60 - 150
Ibuprofen	98.3	73.4	P/P	50 - 160
Imazapyr	115	128	P/P	50 - 150
Imidacloprid	105	107	P/P	60 - 150
Linuron	89.9	87.5	P/P	60 - 150
Mandestrobin	89.5	88.6	P/P	50 - 150
MCPP	107	97.2	P/P	50 - 150
Naproxen	87.6	108	P/P	50 - 160
Primidone	111	107	P/P	60 - 150
Pyraclostrobin	83.3	82.0	P/P	60 - 150
Thiamethoxam	108	111	P/P	50 - 150
Tolfenpyrad	70.9	75.5	P/P	60 - 150
Triclopyr	90.5	90.0	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A99594
Included Lab Sample IDs: 2178752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.1	91.1	P/P	60 - 160
Endothall	83.4	83.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A99606
Included Lab Sample IDs: 2178752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	109	P/P	60 - 160
Glufosinate	104	108	P/P	60 - 160
Glyphosate	95.2	99.6	P/P	60 - 160

Reference Method: SM 5310 B-2011
Run ID: A99616
Included Lab Sample IDs: 2178749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99617

Included Lab Sample IDs: 2178749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.0	93.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99625

Included Lab Sample IDs: 2178749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	90.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99640

Included Lab Sample IDs: 2178748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99681

Included Lab Sample IDs: 2178752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	72.2	72.9	P/P	60 - 160

* 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					1.45	
EPA 300.0 Rev. 2.1	Chloride	103	110	103		1.37	
	Sulfate	106	106	105			
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	99.2	99.7			0.430
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.9	104	101			1.65
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	97.2	97.8			0.468
EPA 365.1 Rev. 2.0	Total-P	103	103	99.1			3.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	94.7	98.9			4.34
EPA 8321B	2,4-D	104	117	106			9.73
	Acesulfame K	107	41.7	43.4			3.82
	Acetaminophen	76.7	107	97.5			9.50
	Acetamiprid	77.4	85.6	75.7			12.2
	Afidopyropen	58.1	69.1	62.5			10.0
	AMPA	113	116	120			2.57
	Bentazon	56.3					5.51
	Benzovindiflupyr	58.9	74.2	73.6			0.733
	Carbamazepine	62.1	72.7	68.4			6.17
	Clothianidin	86.7	111	99.8			4.74
	Dinotefuran	87.2	111	104			6.53
	Diuron	56.4	63.6	59.3			6.97
	Endothall	79.9	79.9	83.2			4.01
	Fenuron	103	103	94.5			8.96
	Fluridone	73.6	84.8	84.8			0.0141
	Glufosinate	115	95.9	90.4			5.99
	Glyphosate	90.6	81.8	88.6			6.00
	Hydrocodone	89.8	102	88.1			15.0
	Ibuprofen	55.9	73.2	69.5			5.24
	Imazapyr	78.8	103	95.6			6.62
	Imidacloprid	92.9	150	143			3.59
	Linuron	54.6	63.7	60.3			5.60
	Mandestrobin	66.7	68.7	74.2			7.81
	MCPP	110	132	126			4.74
	Naproxen	58.2	103	116			12.1
	Primidone	82.1	94.8	83.8			11.3
	Pyraclostrobin	59.0	75.1	67.7			10.3
	Sucralose	75.9	75.8	78.4			2.98
	Thiamethoxam	78.9	106	98.4			7.08
	Tolfenpyrad	44.7	41.7	35.9			14.9
	Triclopyr	75.2	106	103			2.37
SM 2120 B-2011	Color (true)	98.3				1.27	
SM 2320 B-2011	Total Alkalinity	102				1.61	
SM 2540 C-2011	TDS					0.702	
SM 4500 F-C-2011	Fluoride	96.9	98.9	96.4			1.97
SM 5310 B-2011	Organic Carbon	102	108	110			1.64

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2178748
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2178748
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2178748
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2178749
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2178749

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2178749
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2178749
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2178750
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2178752
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2178752
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2178748
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2178748
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2178748
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2178748
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2178748
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2178749

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	06/25/2020			06/25/2020 17:38	Julia Storbeck	2178748
EPA 300.0 Rev. 2.1	06/25/2020			06/30/2020 13:47	Julia Storbeck	2178748
EPA 350.1 Rev. 2.0	06/25/2020			06/28/2020 12:54	Ping Hua	2178749
EPA 351.2 Rev. 2.0	06/25/2020	06/30/2020 14:30	Jhamieka S. Greenwood	07/01/2020 11:07	Jhamieka S. Greenwood	2178749
EPA 353.2 Rev. 2.0	06/25/2020			06/29/2020 09:57	Beverly Y. Sanders	2178749
EPA 365.1 Rev. 2.0	06/25/2020	06/29/2020 13:17	Yen Ta	07/01/2020 08:56	Lipi Saha	2178749
EPA 365.1 Rev. 2.0 dissolved	06/25/2020			06/25/2020 18:07	Carlos Miranda	2178750
EPA 8321B	06/25/2020	06/26/2020 14:00	Hoor Shaik	06/27/2020 18:22	Juyoung Kim	2178752
	06/25/2020	06/29/2020 10:30	Rebecca Ware	06/29/2020 13:04	Rebecca Ware	2178752
	06/25/2020	06/29/2020 10:30	Rebecca Ware	06/30/2020 11:46	Rebecca Ware	2178752
	06/25/2020	06/29/2020 10:30	Rebecca Ware	07/02/2020 16:14	Rebecca Ware	2178752
SM 2120 B-2011	06/25/2020			06/25/2020 17:50	Madeline Gruver	2178748
SM 2320 B-2011	06/25/2020			06/26/2020 21:40	Dale L. Simmons	2178748
SM 2540 C-2011	06/25/2020			06/26/2020 21:00	Madeline Gruver	2178748
SM 2540 D-2011	06/25/2020			06/26/2020 21:42	Madeline Gruver	2178748
SM 4500 F-C-2011	06/25/2020			06/26/2020 21:40	Dale L. Simmons	2178748
SM 5310 B-2011	06/25/2020			06/30/2020 19:17	David Boose	2178749