

Chemical Analysis Report

WQAP-2020-07-16-01

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

Event Description: **Lake Jackson**
Request ID: **RQ-2020-02-10-19**
Customer: **WQAP**
Project ID: **LK-JACKSON**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Curtis Musson

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-AUG-2020 12:06

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 WIMICO MIDDLE

Collection Date/Time: 07/16/2020 11:15

Field ID: G2TLHR0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2183873	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P384798	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P385199	
		Sulfate	7.9		mg SO4/L	P385203	
	SM 2120 B-2011	Color (true)	20		PCU	P384809	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P385002	
	SM 2540 C-2011	TDS	109		mg/L	P385025	
	SM 2540 D-2011	TSS	3	I	mg/L	P384910	
	SM 4500 F-C-2011	Fluoride	0.066	I	mg F/L	P385005	
2183874	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P384827	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P384934	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P384916	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P385033	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P384844	
2183875	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384831	
2183878	EPA 8321B	2,4-D	0.0095		ug/L	P384835	
		Acesulfame K**	0.10	U	ug/L	P384836	
		AMPA**	0.10	U	ug/L	P384836	
		Sucralose**	0.48		ug/L	P384836	
		Acetaminophen**	0.0080	U	ug/L	P384835	
		Acetamiprid**	0.0020	U	ug/L	P384835	
		Endothall**	0.25	U	ug/L	P384836	
		Glufosinate**	0.10	U	ug/L	P384836	
		Glyphosate**	0.10	U	ug/L	P384836	
		Afidopyropen**	0.0020	U	ug/L	P384835	
		Bentazon	0.0015	I	ug/L	P384835	
		Benzovindiflupyr**	0.0020	U	ug/L	P384835	
		Carbamazepine**	8.0E-04	U	ug/L	P384835	
		Clothianidin**	0.0020	U	ug/L	P384835	
		Dinotefuran**	0.0020	U	ug/L	P384835	
		Diuron	0.0045	I	ug/L	P384835	
		Fenuron	0.016	U	ug/L	P384835	
		Fluridone**	8.0E-04	U	ug/L	P384835	
		Imazapyr**	0.0099	I	ug/L	P384835	
		Hydrocodone**	0.0020	U	ug/L	P384835	
		Ibuprofen**	0.020	U	ug/L	P384835	
		Imidacloprid	0.0020	U	ug/L	P384835	
		Linuron	0.0040	U	ug/L	P384835	
		Mandestrobin**	0.0020	U	ug/L	P384835	
		MCPD	0.0020	U	ug/L	P384835	
		Naproxen**	0.0080	U	ug/L	P384835	
		Primidone**	0.0040	U	ug/L	P384835	
		Pyraclostrobin**	0.0020	U	ug/L	P384835	
		Thiamethoxam**	0.0020	U	ug/L	P384835	

Field ID: G2TLHR0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2183878	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P384835	
		Triclopyr**	0.0040	U	ug/L	P384835	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes 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: P384798

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385199

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385203

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384827

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384934

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384916

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385033

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384831

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

Reference Method: EPA 8321B
Batch ID: P384835

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: P384835

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: P384836

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: P384809

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385002

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

Reference Method: SM 2540 C-2011
Batch ID: P385025

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P384910

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385005

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384844

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: P385199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384827

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384916

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385033

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	79.1		P	30 - 160
Acetamiprid	78.6		P	30 - 160
Afidopyropen	65.2		P	30 - 160
Bentazon	62.6		P	30 - 160
Benzovindiflupyr	69.9		P	30 - 160
Carbamazepine	66.9		P	30 - 160
Clothianidin	76.8		P	30 - 160
Dinotefuran	86.6		P	30 - 160
Diuron	58.2		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P384835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	101		P	30 - 160
Fluridone	90.5		P	30 - 160
Hydrocodone	82.3		P	30 - 160
Ibuprofen	79.6		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	97.6		P	30 - 160
Linuron	67.0		P	30 - 160
Mandestrobin	75.5		P	30 - 160
MCPP	129		P	30 - 160
Naproxen	69.1		P	30 - 160
Primidone	77.2		P	30 - 160
Pyraclostrobin	74.1		P	30 - 160
Thiamethoxam	93.7		P	30 - 160
Tolfenpyrad	54.2		P	30 - 160
Triclopyr	95.7		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P384836

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	72.1		P	40 - 150
AMPA	86.1		P	40 - 150
Endothall	96.4		P	40 - 150
Glufosinate	94.9		P	40 - 150
Glyphosate	84.9		P	40 - 140
Sucralose	92.1		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P384809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P385002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385005

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P384844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183497	Chloride	96.1		P	90 - 110
2183528	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183497	Sulfate	94.5		P	90 - 110
2183528	Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183530	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183925	Kjeldahl Nitrogen	99.7	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183874	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183530	Total-P	109	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183855	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183089	Acetaminophen	93.3	85.9	P/P	30 - 160
2183089	Acetamiprid	73.3	69.5	P/P	30 - 160
2183089	Afidopropen	63.4	57.7	P/P	30 - 160
2183089	Benzovindiflupyr	58.9	56.6	P/P	30 - 160
2183089	Carbamazepine	50.1	50.3	P/P	30 - 160
2183089	Clothianidin	76.7	74.8	P/P	30 - 160
2183089	Dinotefuran	96.0	91.4	P/P	30 - 160
2183089	Diuron	38.5	36.6	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P384835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183089	Fenuron	82.7	80.5	P/P	30 - 160
2183089	Fluridone	88.1	80.1	P/P	30 - 160
2183089	Hydrocodone	71.3	66.3	P/P	30 - 160
2183089	Ibuprofen	65.5	62.7	P/P	30 - 160
2183089	Imidacloprid	127	127	P/P	30 - 160
2183089	Linuron	50.4	52.2	P/P	30 - 160
2183089	Mandestrobin	70.9	66.5	P/P	30 - 160
2183089	MCPP	122	122	P/P	30 - 160
2183089	Naproxen	76.0	61.5	P/P	30 - 160
2183089	Primidone	88.2	79.7	P/P	30 - 160
2183089	Pyraclostrobin	70.6	70.4	P/P	30 - 160
2183089	Thiamethoxam	101	103	P/P	30 - 160
2183089	Tolfenpyrad	47.2	44.5	P/P	30 - 160
2183089	Triclopyr	97.1	97.1	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P384836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183365	Acesulfame K	60.0	61.1	P/P	40 - 150
2183365	AMPA	60.8	51.5	P/P	40 - 150
2183365	Endothall	87.8	86.4	P/P	40 - 150
2183365	Glufosinate	69.8	71.1	P/P	40 - 150
2183365	Glyphosate	42.5	47.5	P/P	40 - 140
2183365	Sucralose	107	112	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P385005

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183933	Fluoride	98.1	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183859	Organic Carbon	99.0	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184102	Turbidity	4.01	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183497	Chloride	0.144	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183497	Sulfate	0.0679	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183530	Ammonia-N	1.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183925	Kjeldahl Nitrogen	4.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183874	NO2NO3-N	0.237	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183530	Total-P	0.0227	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183855	O-Phosphate-P	0.395	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P384835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183089	2,4-D	1.80	Spike	P	0 - 30
2183089	Acetaminophen	8.22	Spike	P	0 - 30
2183089	Acetamiprid	5.27	Spike	P	0 - 30
2183089	Afidopyropen	9.29	Spike	P	0 - 30
2183089	Bentazon	0.870	Spike	P	0 - 30
2183089	Benzovindiflupyr	4.00	Spike	P	0 - 30
2183089	Carbamazepine	0.389	Spike	P	0 - 30
2183089	Clothianidin	2.55	Spike	P	0 - 30
2183089	Dinotefuran	4.88	Spike	P	0 - 30
2183089	Diuron	4.00	Spike	P	0 - 30
2183089	Fenuron	2.69	Spike	P	0 - 30
2183089	Fluridone	7.74	Spike	P	0 - 30
2183089	Hydrocodone	7.24	Spike	P	0 - 30
2183089	Ibuprofen	4.32	Spike	P	0 - 30
2183089	Imazapyr	5.38	Spike	P	0 - 30
2183089	Imidacloprid	0.128	Spike	P	0 - 30
2183089	Linuron	3.57	Spike	P	0 - 30
2183089	Mandestrobin	6.38	Spike	P	0 - 30
2183089	MCPP	0.692	Spike	P	0 - 30
2183089	Naproxen	21.1	Spike	P	0 - 30
2183089	Primidone	10.1	Spike	P	0 - 30
2183089	Pyraclostrobin	0.318	Spike	P	0 - 30
2183089	Thiamethoxam	1.10	Spike	P	0 - 30
2183089	Tolfenpyrad	5.84	Spike	P	0 - 30
2183089	Triclopyr	0.00865	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P384836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183365	Acesulfame K	1.80	Spike	P	0 - 30
2183365	AMPA	4.59	Spike	P	0 - 30
2183365	Endothall	1.57	Spike	P	0 - 30
2183365	Glufosinate	1.88	Spike	P	0 - 30
2183365	Glyphosate	1.59	Spike	P	0 - 30
2183365	Sucralose	4.01	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P384809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183849	Color (true)	0.595	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183933	Total Alkalinity	1.47	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P385025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183563	TDS	1.50	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P384910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183563	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183933	Fluoride	1.38	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183859	Organic Carbon	1.73	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2183878

Field Sample ID: G2TLHR0100

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.8	P	30 - 160
EPA 8321B	Diuron-d6	62.9	P	30 - 160
EPA 8321B	Endothall-d6	83.8	P	30 - 160
EPA 8321B	Endothall-d6	83.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.9	P	30 - 160
EPA 8321B	Primidone-d5	85.4	P	30 - 160
EPA 8321B	Sucralose-d6	97.2	P	30 - 160
EPA 8321B	Sucralose-d6	97.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A100012
Included Lab Sample IDs: 2183878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	84.5	83.9	P/P	60 - 160
Glufosinate	97.0	101	P/P	60 - 160
Glyphosate	91.5	93.1	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A100019
Included Lab Sample IDs: 2183873

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: A100019
Included Lab Sample IDs: 2183873

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A100083
Included Lab Sample IDs: 2183874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A100104
Included Lab Sample IDs: 2183873

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A100109
Included Lab Sample IDs: 2183874

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

Reference Method: EPA 8321B
Run ID: A100141
Included Lab Sample IDs: 2183878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.4	91.8	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99945

Included Lab Sample IDs: 2183873

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

Reference Method: SM 2120 B-2011

Run ID: A99949

Included Lab Sample IDs: 2183873

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	105	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99955

Included Lab Sample IDs: 2183874

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99958

Included Lab Sample IDs: 2183875

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.5	96.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99964

Included Lab Sample IDs: 2183874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	97.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99981

Included Lab Sample IDs: 2183878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	129	112	P/P	50 - 150
Acetaminophen	109	117	P/P	60 - 160
Acetamiprid	118	117	P/P	50 - 150
Afidopyropen	101	120	P/P	50 - 150
Bentazon	102	125	P/P	50 - 160
Benzovindiflupyr	120	118	P/P	50 - 150
Carbamazepine	110	112	P/P	60 - 150
Clothianidin	101	97.2	P/P	60 - 150
Dinotefuran	102	89.9	P/P	50 - 150
Diuron	111	114	P/P	60 - 160
Fenuron	114	111	P/P	60 - 150
Fluridone	120	126	P/P	60 - 160
Hydrocodone	107	105	P/P	60 - 150
Ibuprofen	103	115	P/P	50 - 160
Imazapyr	103	126	P/P	50 - 150
Imidacloprid	92.4	89.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99981
Included Lab Sample IDs: 2183878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	115	121	P/P	60 - 150
Mandestrobin	121	123	P/P	50 - 150
MCPP	128	110	P/P	50 - 150
Naproxen	114	111	P/P	50 - 160
Primidone	88.5	93.9	P/P	60 - 150
Pyraclostrobin	117	123	P/P	60 - 150
Thiamethoxam	95.4	89.0	P/P	50 - 150
Tolfenpyrad	108	116	P/P	60 - 150
Triclopyr	103	103	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A99984
Included Lab Sample IDs: 2183878

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.7	76.2	P/P	60 - 160
Endothall	97.4	95.1	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A99985
Included Lab Sample IDs: 2183874

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	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					4.01	
EPA 300.0 Rev. 2.1	Chloride	98.9	96.1	99.6		0.144	
	Sulfate	97.5	94.5	96.2		0.0679	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	98.8	100			1.34
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.4	99.7	108			4.79
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.2				0.237
EPA 365.1 Rev. 2.0	Total-P	107	109	109			0.0227
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	101	101			0.395
EPA 8321B	2,4-D	115					1.80
	Acesulfame K	72.1	60.0	61.1			1.80
	Acetaminophen	79.1	93.3	85.9			8.22
	Acetamiprid	78.6	73.3	69.5			5.27
	Afidopyropen	65.2	63.4	57.7			9.29
	AMPA	86.1	60.8	51.5			4.59
	Bentazon	62.6					0.870
	Benzovindiflupyr	69.9	58.9	56.6			4.00
	Carbamazepine	66.9	50.1	50.3			0.389
	Clothianidin	76.8	76.7	74.8			2.55
	Dinotefuran	86.6	96.0	91.4			4.88
	Diuron	58.2	38.5	36.6			4.00
	Endothall	96.4	87.8	86.4			1.57
	Fenuron	101	82.7	80.5			2.69
	Fluridone	90.5	88.1	80.1			7.74
	Glufosinate	94.9	69.8	71.1			1.88
	Glyphosate	84.9	42.5	47.5			1.59
	Hydrocodone	82.3	71.3	66.3			7.24
	Ibuprofen	79.6	65.5	62.7			4.32
	Imazapyr	100					5.38
	Imidacloprid	97.6	127	127			0.128
	Linuron	67.0	50.4	52.2			3.57
	Mandestrobin	75.5	70.9	66.5			6.38
	MCPP	129	122	122			0.692
	Naproxen	69.1	76.0	61.5			21.1
	Primidone	77.2	88.2	79.7			10.1
	Pyraclostrobin	74.1	70.6	70.4			0.318
	Sucralose	92.1	107	112			4.01
	Thiamethoxam	93.7	101	103			1.10
	Tolfenpyrad	54.2	47.2	44.5			5.84
	Triclopyr	95.7	97.1	97.1			0.0086
SM 2120 B-2011	Color (true)	104				0.595	
SM 2320 B-2011	Total Alkalinity	103				1.47	
SM 2540 C-2011	TDS					1.50	
SM 2540 D-2011	TSS					0.0	
SM 4500 F-C-2011	Fluoride	103	98.1	100			1.38
SM 5310 B-2011	Organic Carbon	98.6	99.0	101			1.73

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2183873
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2183873
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2183873
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2183874

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2183874
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2183874
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2183874
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2183875
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2183878
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2183878
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2183873
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2183873
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2183873
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2183873
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2183873
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2183874

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	07/16/2020			07/17/2020 15:49	Yen Ta	2183873
EPA 300.0 Rev. 2.1	07/16/2020			07/22/2020 07:53	Julia Storbeck	2183873
EPA 350.1 Rev. 2.0	07/16/2020			07/19/2020 12:02	Ping Hua	2183874
EPA 351.2 Rev. 2.0	07/16/2020	07/21/2020 15:30	Sima Feizi	07/22/2020 13:56	Julia Storbeck	2183874
EPA 353.2 Rev. 2.0	07/16/2020			07/21/2020 09:30	Beverly Y. Sanders	2183874
EPA 365.1 Rev. 2.0	07/16/2020	07/23/2020 10:00	Lipi Saha	07/27/2020 08:11	Lipi Saha	2183874
EPA 365.1 Rev. 2.0 dissolved	07/16/2020			07/17/2020 18:19	Virginia P. Brown	2183875
EPA 8321B	07/16/2020	07/20/2020 09:30	Rebecca Ware	07/20/2020 19:38	Rebecca Ware	2183878
	07/16/2020	07/20/2020 09:30	Rebecca Ware	07/21/2020 11:27	Rebecca Ware	2183878
	07/16/2020	07/20/2020 09:30	Rebecca Ware	07/29/2020 01:42	Mohammad Ghaffari	2183878
	07/16/2020	07/21/2020 09:00	Hoor Shaik	07/21/2020 22:30	Juyoung Kim	2183878
SM 2120 B-2011	07/16/2020			07/17/2020 16:36	Benjamin T. Nordmann	2183873
SM 2320 B-2011	07/16/2020			07/22/2020 03:15	Dale L. Simmons	2183873
SM 2540 C-2011	07/16/2020			07/17/2020 18:41	Madeline Gruver	2183873
SM 2540 D-2011	07/16/2020			07/17/2020 19:29	Madeline Gruver	2183873
SM 4500 F-C-2011	07/16/2020			07/22/2020 03:15	Dale L. Simmons	2183873
SM 5310 B-2011	07/16/2020			07/18/2020 02:44	David Boose	2183874