Chemical Analysis Report

WQAP-2021-09-27-01

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-2021-09-13-04**
Customer: **WQAP**
Project ID: **LK-JACKSON**

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Certified by: Colin Wright, Program Administrator

Date Certified: 20-OCT-2021 09:26

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: Sandy Creek **Collection Date/Time: 09/27/2021 13:25**

Field ID: G3TLHR0001 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2278454	EPA 180.1 Rev. 2.0	Turbidity	7.6		NTU	P404328	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P404490	
		Sulfate	0.52		mg SO4/L	P404495	
	SM 2120 B-2011	Color (true)	190		PCU	P404281	
	SM 2320 B-2011	Total Alkalinity	0.75	I	mg CaCO3/L	P404535	
	SM 2540 C-2011	TDS	27		mg/L	P404764	
	SM 2540 D-2011	TSS	6	I	mg/L	P404756	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P404539	
2278455	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P404473	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P404325	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.050		mg N/L	P404334	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P404321	MS
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P404841	
2278456	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P404291	
2278459	EPA 8321B	Acesulfame K	0.10	U	ug/L	P404276	
		2,4-D	0.0020	U	ug/L	P404244	MS
		2,4,5-T	0.0040	U	ug/L	P404244	
		AMPA	0.10	U	ug/L	P404276	
		Acetaminophen	0.0080	U	ug/L	P404244	
		Acetamiprid	0.0020	U	ug/L	P404244	
		Endothall	0.25	U	ug/L	P404276	
		Glufosinate	0.10	U	ug/L	P404276	
		Glyphosate	0.10	U	ug/L	P404276	
		Afidopyropen	0.0020	U	ug/L	P404244	
		Bentazon	8.0E-04	U	ug/L	P404244	
		Sucralose	0.010	U	ug/L	P404276	
		Benzovindiflupyr	0.0020	U	ug/L	P404244	
		Carbamazepine	8.0E-04	U	ug/L	P404244	
		Clothianidin	0.0020	U	ug/L	P404244	
		Dinotefuran	0.024		ug/L	P404244	
		Diuron	0.0020	U	ug/L	P404244	
		Fenuron	0.016	U	ug/L	P404244	
		Fluridone	8.0E-04	U	ug/L	P404244	
		Imazapyr	0.27		ug/L	P404244	
		Hydrocodone	0.0020	U	ug/L	P404244	
		Ibuprofen	0.020	U	ug/L	P404244	
		Imidacloprid	0.0020	U	ug/L	P404244	MS
		Linuron	0.0040	U	ug/L	P404244	
		Mandestrobin	0.0020	U	ug/L	P404244	
		MCPP	0.0020	U	ug/L	P404244	MS
		Naproxen	0.0080	U	ug/L	P404244	
		Primidone	0.0040	U	ug/L	P404244	
		Pyraclostrobin	0.0020	U	ug/L	P404244	

Field ID: G3TLHR0001 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2278459	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P404244	MS
		Tolfenpyrad	0.0020	U	ug/L	P404244	
		Triclopyr	0.0040	U	ug/L	P404244	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P404328

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404490

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404495

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404473

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404325

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404334

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404321

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404291

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

Reference Method: EPA 8321B
Batch ID: P404244

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P404244

Component	Result	Code	Units
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

Reference Method: EPA 8321B
Batch ID: P404276

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: P404281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P404535

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

Reference Method: SM 2540 C-2011
Batch ID: P404764

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P404756

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P404539

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P404841

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: P404490

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404495

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404473

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404325

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404334

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: P404321

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: P404291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P404244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	98.0		P	40 - 150
2,4,5-T	110		P	40 - 150
Acetaminophen	77.8		P	30 - 150
Acetamiprid	86.7		P	40 - 150
Afidopyropen	74.5		P	40 - 150
Bentazon	96.4		P	30 - 150
Benzovindiflupyr	87.5		P	40 - 150
Carbamazepine	87.9		P	40 - 150
Clothianidin	79.5		P	40 - 150
Dinotefuran	87.3		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P404244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	76.7		P	40 - 150
Fenuron	88.9		P	40 - 150
Fluridone	82.5		P	40 - 150
Hydrocodone	90.9		P	40 - 150
Ibuprofen	82.1		P	40 - 150
Imazapyr	86.4		P	40 - 150
Imidacloprid	93.2		P	40 - 150
Linuron	83.0		P	40 - 150
Mandestrobin	83.2		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	99.4		P	40 - 150
Primidone	101		P	40 - 150
Pyraclostrobin	78.2		P	40 - 150
Thiamethoxam	93.0		P	40 - 150
Tolfenpyrad	47.7		P	30 - 150
Triclopyr	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.8		P	40 - 150
AMPA	92.7		P	40 - 160
Endothall	69.3		P	40 - 150
Glufosinate	97.9		P	40 - 160
Glyphosate	88.3		P	40 - 160
Sucralose	66.8		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P404281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P404535

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

Reference Method: SM 4500 F-C-2011
Batch ID: P404539

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

Reference Method: SM 5310 B-2011
Batch ID: P404841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277567	Chloride	103		P	90 - 110
2278659	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277567	Sulfate	105		P	90 - 110
2278659	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278551	Ammonia-N	95.2	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278554	Kjeldahl Nitrogen	99.9	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278424	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278661	Total-P	111	114	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278559	O-Phosphate-P	98.2	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P404244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277943	2,4-D	152	157	F/F	40 - 150
2277943	2,4,5-T	128	129	P/P	40 - 150
2277943	Acetaminophen	122	123	P/P	30 - 150
2277943	Acetamiprid	105	106	P/P	40 - 150
2277943	Afidopyropen	75.3	86.0	P/P	40 - 150
2277943	Bentazon	94.4	88.5	P/P	30 - 150
2277943	Benzovindiflupyr	87.9	82.7	P/P	40 - 150
2277943	Carbamazepine	111	119	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P404244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277943	Clothianidin	111	120	P/P	40 - 150
2277943	Dinotefuran	132	132	P/P	40 - 150
2277943	Diuron	93.7	85.4	P/P	40 - 150
2277943	Fenuron	98.0	92.7	P/P	40 - 150
2277943	Fluridone	83.9	84.5	P/P	40 - 150
2277943	Hydrocodone	117	104	P/P	40 - 150
2277943	Ibuprofen	88.2	69.0	P/P	40 - 150
2277943	Imazapyr	123	126	P/P	40 - 150
2277943	Imidacloprid	166	177	F/F	40 - 150
2277943	Linuron	73.5	84.0	P/P	40 - 150
2277943	Mandestrobin	95.7	95.5	P/P	40 - 150
2277943	MCPP	141	154	P/F	40 - 150
2277943	Naproxen	112	89.1	P/P	40 - 150
2277943	Primidone	115	139	P/P	40 - 150
2277943	Pyraclostrobin	81.9	84.0	P/P	40 - 150
2277943	Thiamethoxam	167	166	F/F	40 - 150
2277943	Tolfenpyrad	57.3	56.5	P/P	30 - 150
2277943	Triclopyr	115	132	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278459	Acesulfame K	105	112	P/P	40 - 150
2278459	AMPA	96.6	94.8	P/P	40 - 160
2278459	Endothall	94.8	96.1	P/P	40 - 150
2278459	Glufosinate	101	103	P/P	40 - 160
2278459	Glyphosate	80.4	79.9	P/P	40 - 160
2278459	Sucralose	77.1	76.4	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P404539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278659	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P404841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278606	Organic Carbon	94.6	95.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P404328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278422	Turbidity	1.66	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278659	Chloride	0.527	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278659	Sulfate	0.542	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278551	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278554	Kjeldahl Nitrogen	5.22	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278424	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278661	Total-P	2.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278559	O-Phosphate-P	0.616	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P404244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277943	2,4-D	3.02	Spike	P	0 - 30
2277943	2,4,5-T	0.588	Spike	P	0 - 30
2277943	Acetaminophen	0.885	Spike	P	0 - 30
2277943	Acetamiprid	1.65	Spike	P	0 - 30
2277943	Afidopyropen	13.3	Spike	P	0 - 30
2277943	Bentazon	6.47	Spike	P	0 - 30
2277943	Benzovindiflupyr	6.08	Spike	P	0 - 30
2277943	Carbamazepine	6.75	Spike	P	0 - 30
2277943	Clothianidin	7.96	Spike	P	0 - 30
2277943	Dinotefuran	0.175	Spike	P	0 - 30
2277943	Diuron	9.19	Spike	P	0 - 30
2277943	Fenuron	5.58	Spike	P	0 - 30
2277943	Fluridone	0.681	Spike	P	0 - 30
2277943	Hydrocodone	11.1	Spike	P	0 - 30
2277943	Ibuprofen	24.4	Spike	P	0 - 30
2277943	Imazapyr	1.72	Spike	P	0 - 30
2277943	Imidacloprid	6.11	Spike	P	0 - 30
2277943	Linuron	13.4	Spike	P	0 - 30
2277943	Mandestrobin	0.222	Spike	P	0 - 30
2277943	MCPP	8.82	Spike	P	0 - 30
2277943	Naproxen	23.2	Spike	P	0 - 30
2277943	Primidone	18.9	Spike	P	0 - 30
2277943	Pyraclostrobin	2.52	Spike	P	0 - 30
2277943	Thiamethoxam	0.807	Spike	P	0 - 30
2277943	Tolfenpyrad	1.34	Spike	P	0 - 30
2277943	Triclopyr	13.2	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P404276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278459	Acesulfame K	6.01	Spike	P	0 - 30
2278459	AMPA	1.90	Spike	P	0 - 30
2278459	Endothall	1.35	Spike	P	0 - 30
2278459	Glufosinate	1.93	Spike	P	0 - 30
2278459	Glyphosate	0.672	Spike	P	0 - 30
2278459	Sucralose	0.911	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P404281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278604	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P404535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P404535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278659	Total Alkalinity	1.33	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P404764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278718	TDS	3.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P404539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278659	Fluoride	0.472	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P404841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278606	Organic Carbon	0.499	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2278459
Field Sample ID: G3TLHR0001

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	120	P	30 - 160
EPA 8321B	Diuron-d6	96.5	P	30 - 160
EPA 8321B	Endothall-d6	95.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.3	P	30 - 160
EPA 8321B	Primidone-d5	79.4	P	30 - 160
EPA 8321B	Sucralose-d6	76.0	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: SM 2120 B-2011
Run ID: A108034
Included Lab Sample IDs: 2278454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A108036
Included Lab Sample IDs: 2278456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A108043
Included Lab Sample IDs: 2278459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	106	P/P	50 - 150
2,4,5-T	93.6	111	P/P	50 - 150
Acetaminophen	97.9	107	P/P	60 - 160
Acetamiprid	111	105	P/P	50 - 150
Afidopyropen	112	142	P/P	50 - 150
Bentazon	111	101	P/P	50 - 160
Benzovindiflupyr	108	109	P/P	50 - 150
Carbamazepine	108	106	P/P	60 - 150
Clothianidin	102	97.3	P/P	60 - 150
Dinotefuran	102	103	P/P	50 - 150
Diuron	102	104	P/P	60 - 160
Fenuron	104	99.8	P/P	60 - 150
Fluridone	99.2	109	P/P	60 - 160
Hydrocodone	105	107	P/P	60 - 150
Ibuprofen	123	125	P/P	50 - 160
Imazapyr	77.5	91.6	P/P	50 - 150
Imidacloprid	99.4	94.8	P/P	60 - 150
Linuron	102	127	P/P	60 - 150
Mandestrobin	109	114	P/P	50 - 150
MCPP	99.9	104	P/P	50 - 150
Naproxen	109	103	P/P	50 - 160
Primidone	135	115	P/P	60 - 150
Pyraclostrobin	101	107	P/P	60 - 150
Thiamethoxam	97.7	112	P/P	50 - 150
Tolfenpyrad	95.9	108	P/P	60 - 150
Triclopyr	104	110	P/P	50 - 150

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A108050
Included Lab Sample IDs: 2278454

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A108052
Included Lab Sample IDs: 2278455

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

Reference Method: EPA 8321B
Run ID: A108094
Included Lab Sample IDs: 2278459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.3	99.9	P/P	60 - 160
Glufosinate	104	112	P/P	60 - 160
Glyphosate	98.7	97.3	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A108100
Included Lab Sample IDs: 2278455

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A108109
Included Lab Sample IDs: 2278455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A108110
Included Lab Sample IDs: 2278455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A108117
Included Lab Sample IDs: 2278459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.1	80.3	P/P	60 - 160
Endothall	89.1	86.5	P/P	60 - 160
Sucralose	81.5	82.6	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A108118
Included Lab Sample IDs: 2278454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A108136
Included Lab Sample IDs: 2278454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.8	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A108136
Included Lab Sample IDs: 2278454

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

Reference Method: SM 5310 B-2011
Run ID: A108260
Included Lab Sample IDs: 2278455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	94.3	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.66	
EPA 300.0 Rev. 2.1	Chloride	101	103	103		0.527	
	Sulfate	104	106	105		0.542	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	95.2	95.2			0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.9	109			5.22
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	107	111	114			2.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.7	98.2	97.3			0.616
EPA 8321B	2,4-D	98.0	152	157			3.02
	2,4,5-T	110	128	129			0.588
	Acesulfame K	79.8	105	112			6.01
	Acetaminophen	77.8	122	123			0.885
	Acetamiprid	86.7	105	106			1.65
	Afidopyropen	74.5	75.3	86.0			13.3
	AMPA	92.7	96.6	94.8			1.90
	Bentazon	96.4	94.4	88.5			6.47
	Benzovindiflupyr	87.5	87.9	82.7			6.08
	Carbamazepine	87.9	111	119			6.75
	Clothianidin	79.5	111	120			7.96
	Dinotefuran	87.3	132	132			0.175
	Diuron	76.7	93.7	85.4			9.19
	Endothall	69.3	94.8	96.1			1.35
	Fenuron	88.9	98.0	92.7			5.58
	Fluridone	82.5	83.9	84.5			0.681
	Glufosinate	97.9	101	103			1.93
	Glyphosate	88.3	80.4	79.9			0.672
	Hydrocodone	90.9	117	104			11.1
	Ibuprofen	82.1	88.2	69.0			24.4
	Imazapyr	86.4	123	126			1.72
	Imidacloprid	93.2	166	177			6.11
	Linuron	83.0	73.5	84.0			13.4
	Mandestrobin	83.2	95.7	95.5			0.222
	MCPP	113	141	154			8.82
	Naproxen	99.4	112	89.1			23.2
	Primidone	101	115	139			18.9
	Pyraclostrobin	78.2	81.9	84.0			2.52
	Sucralose	66.8	77.1	76.4			0.911
	Thiamethoxam	93.0	167	166			0.807
	Tolfenpyrad	47.7	57.3	56.5			1.34
	Triclopyr	102	115	132			13.2
SM 2120 B-2011	Color (true)	99.8				1.99	
SM 2320 B-2011	Total Alkalinity	100				1.33	
SM 2540 C-2011	TDS					3.17	
SM 4500 F-C-2011	Fluoride	100	101	101			0.472
SM 5310 B-2011	Organic Carbon	97.0	94.6	95.2			0.499

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2278454
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2278454
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2278454
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2278455

Reference Method Descriptions

Method	Description	Associated Samples
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2278455
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2278455
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2278455
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2278456
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2278459
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2278454
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2278454
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2278454
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2278454
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2278454
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2278455

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	09/27/2021			09/28/2021 16:48	Khloe J Berg	2278454
EPA 300.0 Rev. 2.1	09/27/2021			10/01/2021 16:02	Lipi Saha	2278454
EPA 350.1 Rev. 2.0	09/27/2021			10/01/2021 11:59	Ping Hua	2278455
EPA 351.2 Rev. 2.0	09/27/2021	09/29/2021 11:23	Benjamin T. Nordmann	10/01/2021 10:20	Alexandra J Mattheus	2278455
EPA 353.2 Rev. 2.0	09/27/2021			09/29/2021 09:36	Beverly Y. Sanders	2278455
EPA 365.1 Rev. 2.0	09/27/2021	09/29/2021 16:23	Simonne.V. Calhoun	10/01/2021 12:26	Sarah A Nixon	2278455
EPA 365.1 Rev. 2.0 dissolved	09/27/2021			09/28/2021 14:32	James L Waggerby	2278456
EPA 8321B	09/27/2021	09/28/2021 12:00	Hoor Shaik	09/29/2021 05:28	Juyoung Kim	2278459
	09/27/2021	09/30/2021 13:00	Juyoung Kim	09/30/2021 16:09	Juyoung Kim	2278459
	09/27/2021	09/30/2021 13:00	Juyoung Kim	10/01/2021 11:50	Manjita Shrestha	2278459
SM 2120 B-2011	09/27/2021			09/28/2021 15:13	Benjamin T. Nordmann	2278454
SM 2320 B-2011	09/27/2021			09/30/2021 22:20	Dale L. Simmons	2278454
SM 2540 C-2011	09/27/2021			09/30/2021 15:26	Yijie Li	2278454
SM 2540 D-2011	09/27/2021			09/30/2021 15:26	Yijie Li	2278454
SM 4500 F-C-2011	09/27/2021			09/30/2021 22:20	Dale L. Simmons	2278454
SM 5310 B-2011	09/27/2021			10/06/2021 21:04	Khloe J Berg	2278455