

Chemical Analysis Report

NE-DIST-2020-02-28-01

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

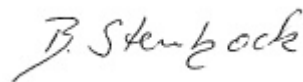
Event Description: **LSJR East 2020**
Request ID: **RQ-2020-02-17-31**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 18-MAR-2020 17:10



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: Miller Cr @ Schumacher

Collection Date/Time: 02/27/2020 12:35

Field ID: 20030794

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161142	EPA 180.1 Rev. 2.0	Turbidity	2.6	A	NTU	P379850	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P380164	
		Sulfate	51		mg SO4/L	P380167	
	SM 2120 B-2011	Color (true)	32		PCU	P379811	
	SM 2320 B-2011	Total Alkalinity	58		mg CaCO3/L	P380322	
	SM 2540 C-2011	TDS	190	A	mg/L	P380330	
	SM 2540 D-2011	TSS	2	UA	mg/L	P380334	
	SM 4500 F-C-2011	Fluoride	0.090	I	mg F/L	P380273	
2161143	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P380067	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P379955	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P380234	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P380139	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P379929	
2161144	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P379831	
2161156	EPA 8321B	2,4-D	0.0034	I	ug/L	P379970	
		Acesulfame K**	0.10	U	ug/L	P379902	MS
		AMPA**	0.10	U	ug/L	P379902	
		Sucralose**	0.12		ug/L	P379902	
		Acetaminophen**	0.0080	U	ug/L	P379970	
		Acetamiprid**	0.0020	U	ug/L	P379970	
		Endothall**	0.25	U	ug/L	P379902	
		Glufosinate**	0.10	U	ug/L	P379902	
		Glyphosate**	0.10	U	ug/L	P379902	
		Afidopyropen**	0.0020	UJ	ug/L	P379970	
		Bentazon	0.0040		ug/L	P379970	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P379970	
		Carbamazepine**	8.0E-04	U	ug/L	P379970	
		Clothianidin**	0.0020	U	ug/L	P379970	
		Dinotefuran**	0.0020	U	ug/L	P379970	
		Diuron	0.0028	I	ug/L	P379970	
		Fenuron	0.016	U	ug/L	P379970	
		Fluridone**	8.0E-04	U	ug/L	P379970	
		Imazapyr**	0.013	I	ug/L	P379970	
		Hydrocodone**	0.0020	U	ug/L	P379970	
		Ibuprofen**	0.020	U	ug/L	P379970	
		Imidacloprid	0.034		ug/L	P379970	MS
		Linuron	0.0040	U	ug/L	P379970	
		Mandestrobin**	0.0020	UJ	ug/L	P379970	
		MCPP	0.0020	U	ug/L	P379970	MS
		Naproxen**	0.0080	U	ug/L	P379970	
		Primidone**	0.0040	U	ug/L	P379970	
		Pyraclostrobin**	0.0020	U	ug/L	P379970	
		Thiamethoxam**	0.0020	U	ug/L	P379970	

Field ID: 20030794

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161156	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P379970	
		Triclopyr**	0.0040	U	ug/L	P379970	

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. 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: P379850

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380067

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379955

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380234

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380139

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379831

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

Reference Method: EPA 8321B
Batch ID: P379902

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P379902

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P379970

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
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: SM 2120 B-2011
Batch ID: P379811

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380322

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

Reference Method: SM 2540 C-2011
Batch ID: P380330

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P380334

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P379929

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: P380164

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380067

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379955

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380139

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379831

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

Reference Method: EPA 8321B
Batch ID: P379902

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	114		P	40 - 150
AMPA	99.4		P	40 - 150
Endothall	98.1		P	40 - 150
Glufosinate	126		P	40 - 150
Glyphosate	114		P	40 - 140
Sucralose	103		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P379970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	108		P	30 - 160
Acetaminophen	74.9		P	30 - 160
Acetamiprid	78.2		P	30 - 160
Afidopyropen	77.7		P	30 - 160
Bentazon	133		P	30 - 160
Benzovindiflupyr	76.5		P	30 - 160
Carbamazepine	85.2		P	30 - 160
Clothianidin	65.8		P	30 - 160
Dinotefuran	80.5		P	30 - 160
Diuron	86.0		P	30 - 160
Fenuron	83.7		P	30 - 160
Fluridone	80.8		P	30 - 160
Hydrocodone	87.3		P	30 - 160
Ibuprofen	67.8		P	30 - 160
Imazapyr	73.3		P	30 - 160
Imidacloprid	87.7		P	30 - 160
Linuron	74.9		P	30 - 160
Mandestrobin	79.2		P	30 - 160
MCPP	139		P	30 - 160
Naproxen	70.0		P	30 - 160
Primidone	83.8		P	30 - 160
Pyraclostrobin	74.3		P	30 - 160
Thiamethoxam	80.8		P	30 - 160
Tolfenpyrad	46.9		P	30 - 160
Triclopyr	109		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P379811

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

Reference Method: SM 2320 B-2011
Batch ID: P380322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P379929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160748	Chloride	103		P	90 - 110
2160965	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160748	Sulfate	102		P	90 - 110
2160965	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160966	Ammonia-N	97.8	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161143	Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161143	NO2NO3-N	96.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161143	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161144	O-Phosphate-P	93.9	93.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P379902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161094	Acesulfame K	30.2	34.3	F/F	40 - 150
2161094	AMPA	104	106	P/P	40 - 150
2161094	Endothall	126	136	P/P	40 - 150
2161094	Glufosinate	114	116	P/P	40 - 150
2161094	Glyphosate	93.9	101	P/P	40 - 140
2161094	Sucralose	102	99.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P379970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161094	2,4-D	151	143	P/P	30 - 160
2161094	Acetaminophen	87.4	83.9	P/P	30 - 160
2161094	Acetamiprid	78.8	75.6	P/P	30 - 160
2161094	Afidopyropen	93.2	85.5	P/P	30 - 160
2161094	Benzovindiflupyr	81.3	84.8	P/P	30 - 160
2161094	Carbamazepine	83.0	77.3	P/P	30 - 160
2161094	Clothianidin	76.2	65.1	P/P	30 - 160
2161094	Dinotefuran	138	119	P/P	30 - 160
2161094	Diuron	83.2	76.1	P/P	30 - 160
2161094	Fenuron	74.1	75.7	P/P	30 - 160
2161094	Fluridone	84.7	82.1	P/P	30 - 160
2161094	Hydrocodone	111	103	P/P	30 - 160
2161094	Ibuprofen	72.3	79.1	P/P	30 - 160
2161094	Imazapyr	112	105	P/P	30 - 160
2161094	Imidacloprid	161	170	F/F	30 - 160
2161094	Linuron	76.8	74.8	P/P	30 - 160
2161094	Mandestrobin	82.3	82.3	P/P	30 - 160
2161094	MCCP	152	164	P/F	30 - 160
2161094	Naproxen	101	86.6	P/P	30 - 160
2161094	Primidone	79.7	85.2	P/P	30 - 160
2161094	Pyraclostrobin	83.9	89.1	P/P	30 - 160
2161094	Thiamethoxam	104	128	P/P	30 - 160
2161094	Tolfenpyrad	66.6	65.6	P/P	30 - 160
2161094	Triclopyr	132	141	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161279	Fluoride	103	105	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P379929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160718	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P379850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161142	Turbidity	4.22	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160748	Chloride	0.387	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160748	Sulfate	0.903	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160966	Ammonia-N	0.864	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P379955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161143	Kjeldahl Nitrogen	0.00635	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161143	NO2NO3-N	0.273	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161143	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161144	O-Phosphate-P	0.552	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P379902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161094	Acesulfame K	12.8	Spike	P	0 - 30
2161094	AMPA	2.23	Spike	P	0 - 30
2161094	Endothall	7.18	Spike	P	0 - 30
2161094	Glufosinate	1.59	Spike	P	0 - 30
2161094	Glyphosate	7.64	Spike	P	0 - 30
2161094	Sucralose	1.70	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P379970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161094	2,4-D	4.76	Spike	P	0 - 30
2161094	Acetaminophen	4.11	Spike	P	0 - 30
2161094	Acetamiprid	4.07	Spike	P	0 - 30
2161094	Afidopyropen	8.63	Spike	P	0 - 30
2161094	Bentazon	2.40	Spike	P	0 - 30
2161094	Benzovindiflupyr	4.21	Spike	P	0 - 30
2161094	Carbamazepine	7.11	Spike	P	0 - 30
2161094	Clothianidin	15.8	Spike	P	0 - 30
2161094	Dinotefuran	12.3	Spike	P	0 - 30
2161094	Diuron	8.36	Spike	P	0 - 30
2161094	Fenuron	2.21	Spike	P	0 - 30
2161094	Fluridone	3.06	Spike	P	0 - 30
2161094	Hydrocodone	8.33	Spike	P	0 - 30
2161094	Ibuprofen	9.02	Spike	P	0 - 30
2161094	Imazapyr	4.14	Spike	P	0 - 30
2161094	Imidacloprid	4.96	Spike	P	0 - 30
2161094	Linuron	2.64	Spike	P	0 - 30
2161094	Mandestrobin	0.0392	Spike	P	0 - 30
2161094	MCPP	7.07	Spike	P	0 - 30
2161094	Naproxen	15.3	Spike	P	0 - 30
2161094	Primidone	6.60	Spike	P	0 - 30
2161094	Pyraclostrobin	5.98	Spike	P	0 - 30
2161094	Thiamethoxam	19.5	Spike	P	0 - 30
2161094	Tolfenpyrad	1.48	Spike	P	0 - 30
2161094	Triclopyr	6.43	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P379811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161124	Color (true)	1.49	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160714	Total Alkalinity	0.124	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P380330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161142	TDS	2.62	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161279	Fluoride	0.960	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P379929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160718	Organic Carbon	1.05	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2161156
Field Sample ID: 20030794

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	69.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.8	P	30 - 160
EPA 8321B	Diuron-d6	92.9	P	30 - 160
EPA 8321B	Endothall-d6	143	P	30 - 160
EPA 8321B	Endothall-d6	143	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.8	P	30 - 160
EPA 8321B	Primidone-d5	62.8	P	30 - 160
EPA 8321B	Sucralose-d6	90.9	P	30 - 160
EPA 8321B	Sucralose-d6	90.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A97887

Included Lab Sample IDs: 2161142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97893

Included Lab Sample IDs: 2161144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	95.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97897

Included Lab Sample IDs: 2161142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A97937

Included Lab Sample IDs: 2161143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97988

Included Lab Sample IDs: 2161143

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97999

Included Lab Sample IDs: 2161143

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98001

Included Lab Sample IDs: 2161142

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98035

Included Lab Sample IDs: 2161143

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A98041
 Included Lab Sample IDs: 2161156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	95.4	95.9	P/P	40 - 200
Glufosinate	132	124	P/P	40 - 200
Glyphosate	115	111	P/P	40 - 200

Reference Method: SM 4500 F-C-2011
 Run ID: A98059
 Included Lab Sample IDs: 2161142

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

Reference Method: EPA 8321B
 Run ID: A98069
 Included Lab Sample IDs: 2161156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	98.9	P/P	60 - 160
Endothall	147	137	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A98071
 Included Lab Sample IDs: 2161143

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

Reference Method: SM 2320 B-2011
 Run ID: A98082
 Included Lab Sample IDs: 2161142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A98184
 Included Lab Sample IDs: 2161156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	91.9	P/P	50 - 150
Acetaminophen	98.5	101	P/P	60 - 160
Acetamiprid	94.9	101	P/P	50 - 150
Afidopyropen	88.6	106	P/P	50 - 150
Bentazon	102	159	P/P	50 - 160
Benzovindiflupyr	101	112	P/P	50 - 150
Carbamazepine	106	105	P/P	60 - 150
Clothianidin	86.1	75.2	P/P	60 - 150
Dinotefuran	106	104	P/P	50 - 150
Diuron	118	121	P/P	60 - 150
Fenuron	100	83.4	P/P	60 - 150
Fluridone	93.6	98.6	P/P	60 - 160
Hydrocodone	115	109	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98184

Included Lab Sample IDs: 2161156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	101	89.2	P/P	50 - 160
Imazapyr	85.1	82.8	P/P	50 - 150
Imidacloprid	100	96.6	P/P	60 - 150
Linuron	111	119	P/P	60 - 150
Mandestrobin	99.0	102	P/P	50 - 150
MCPP	90.2	92.7	P/P	50 - 150
Naproxen	64.6	89.7	P/P	50 - 160
Primidone	101	97.8	P/P	60 - 150
Pyraclostrobin	103	117	P/P	60 - 150
Thiamethoxam	82.8	104	P/P	50 - 150
Tolfenpyrad	104	106	P/P	60 - 150
Triclopyr	80.0	85.1	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A98193

Included Lab Sample IDs: 2161156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	104	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					4.22	
EPA 300.0 Rev. 2.1	Chloride	100	103	100		0.387	
	Sulfate	97.9	102	99.7		0.903	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	97.8	96.9			0.864
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	104	104			0.0063
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	96.0	96.5			0.273
EPA 365.1 Rev. 2.0	Total-P	104	106	107			1.04
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.6	93.9	93.2			0.552
EPA 8321B	2,4-D	108	151	143			4.76
	Acesulfame K	114	30.2	34.3			12.8
	Acetaminophen	74.9	87.4	83.9			4.11
	Acetamiprid	78.2	78.8	75.6			4.07
	Afidopyropen	77.7	93.2	85.5			8.63
	AMPA	99.4	104	106			2.23
	Bentazon	133					2.40
	Benzovindiflupyr	76.5	81.3	84.8			4.21
	Carbamazepine	85.2	83.0	77.3			7.11
	Clothianidin	65.8	76.2	65.1			15.8
	Dinotefuran	80.5	138	119			12.3
	Diuron	86.0	83.2	76.1			8.36
	Endothall	98.1	126	136			7.18
	Fenuron	83.7	74.1	75.7			2.21
	Fluridone	80.8	84.7	82.1			3.06
	Glufosinate	126	114	116			1.59
	Glyphosate	114	93.9	101			7.64
	Hydrocodone	87.3	111	103			8.33
	Ibuprofen	67.8	72.3	79.1			9.02
	Imazapyr	73.3	112	105			4.14
	Imidacloprid	87.7	161	170			4.96
	Linuron	74.9	76.8	74.8			2.64
	Mandestrobin	79.2	82.3	82.3			0.0392
	MCPP	139	152	164			7.07
	Naproxen	70.0	101	86.6			15.3
	Primidone	83.8	79.7	85.2			6.60
	Pyraclostrobin	74.3	83.9	89.1			5.98
	Sucralose	103	102	99.8			1.70
	Thiamethoxam	80.8	104	128			19.5
	Tolfenpyrad	46.9	66.6	65.6			1.48
	Triclopyr	109	132	141			6.43
SM 2120 B-2011	Color (true)	103				1.49	
SM 2320 B-2011	Total Alkalinity	103				0.124	
SM 2540 C-2011	TDS					2.62	
SM 4500 F-C-2011	Fluoride	101	103	105			0.960
SM 5310 B-2011	Organic Carbon	97.4	104				1.05

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2161142
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2161142
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2161142
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2161143
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2161143

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2161143
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2161143
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2161144
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2161156
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2161156
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2161142
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2161142
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2161142
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2161142
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2161142
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2161143

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	02/28/2020			02/28/2020 15:40	Yen Ta	2161142
EPA 300.0 Rev. 2.1	02/28/2020			03/06/2020 06:10	Lipi Saha	2161142
EPA 350.1 Rev. 2.0	02/28/2020			03/04/2020 11:43	Ping Hua	2161143
EPA 351.2 Rev. 2.0	02/28/2020	03/03/2020 09:25	Sima Feizi	03/04/2020 11:05	Jhamieka S. Greenwood	2161143
EPA 353.2 Rev. 2.0	02/28/2020			03/06/2020 12:01	Beverly Y. Sanders	2161143
EPA 365.1 Rev. 2.0	02/28/2020	03/05/2020 13:48	Yen Ta	03/09/2020 13:35	Benjamin T. Nordmann	2161143
EPA 365.1 Rev. 2.0 dissolved	02/28/2020			02/28/2020 14:51	Carlos Miranda	2161144
EPA 8321B	02/28/2020	03/03/2020 10:45	Rebecca Ware	03/03/2020 13:26	Rebecca Ware	2161156
	02/28/2020	03/03/2020 10:45	Rebecca Ware	03/04/2020 13:11	Rebecca Ware	2161156
	02/28/2020	03/03/2020 10:45	Rebecca Ware	03/12/2020 21:13	Rebecca Ware	2161156
	02/28/2020	03/05/2020 09:00	Hoor Shaik	03/10/2020 13:36	Juyoung Kim	2161156
SM 2120 B-2011	02/28/2020			02/28/2020 14:26	Madeline Funaro	2161142
SM 2320 B-2011	02/28/2020			03/10/2020 01:24	Lauren Lees	2161142
SM 2540 C-2011	02/28/2020			03/02/2020 15:08	Yijie Li	2161142
SM 2540 D-2011	02/28/2020			03/02/2020 14:22	Yijie Li	2161142
SM 4500 F-C-2011	02/28/2020			03/07/2020 11:59	Samantha Davila	2161142
SM 5310 B-2011	02/28/2020			03/03/2020 03:53	Lauren Lees	2161143