

Chemical Analysis Report

NE-DIST-2020-06-17-01

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

Event Description: **Moses Creek**
Request ID: **RQ-2020-04-06-53**
Customer: **NE-DIST**
Project ID: **SMP**

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

Date Certified: 08-JUL-2020 12:36

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Unnamed Drain @ Eagles Nest Rd

Collection Date/Time: 06/16/2020 10:15

Field ID: 27010079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177289	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P383351	
	EPA 300.0 Rev. 2.1	Chloride	710		mg Cl/L	P383736	
		Sulfate	89		mg SO4/L	P383739	
		Color (true)	220		PCU	P383356	
	SM 2320 B-2011	Total Alkalinity	109		mg CaCO3/L	P383534	
	SM 2540 C-2011	TDS	1.30E+03		mg/L	P383664	
	SM 2540 D-2011	TSS	5	I	mg/L	P383600	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P383537	
2177290	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P383469	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P383482	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P383375	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P383415	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P383530	
2177291	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.087		mg P/L	P383342	

Ref. Method and Comment:

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

Sample Location: Moses Creek at Preserve Dock

Collection Date/Time: 06/16/2020 11:00

Field ID: G5NE0004

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177286	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P383351	
	EPA 300.0 Rev. 2.1	Bromide	5.4		mg Br/L	P384096	
	SM 2320 B-2011	Total Alkalinity	88		mg CaCO3/L	P383534	
	SM 2540 D-2011	TSS	22		mg/L	P383602	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P383537	
2177287	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P383474	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P383429	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383527	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P383416	
	SM 5310 B-2011	Organic Carbon	31		mg C/L	P383530	
2177288	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P383341	

Ref. Method and Comment:

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

Sample Location: Moses CR AT US 1

Collection Date/Time: 06/16/2020 12:00

Field ID: 27010050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177301	EPA 8321B	2,4-D	0.0076	I	ug/L	P383442	
		Acesulfame K**	0.10	U	ug/L	P383328	
		AMPA**	0.11	I	ug/L	P383328	
		Sucralose**	0.013	I	ug/L	P383328	
		Acetaminophen**	0.0080	U	ug/L	P383442	
		Acetamiprid**	0.0020	U	ug/L	P383442	
		Endothall**	0.25	U	ug/L	P383328	
		Glufosinate**	0.10	U	ug/L	P383328	
		Glyphosate**	0.11	I	ug/L	P383328	
		Afidopyropen**	0.0020	U	ug/L	P383442	
		Bentazon	0.016		ug/L	P383442	
		Benzovindiflupyr**	0.0020	U	ug/L	P383442	
		Carbamazepine**	8.0E-04	U	ug/L	P383442	
		Clothianidin**	0.0020	U	ug/L	P383442	
		Dinotefuran**	0.0020	U	ug/L	P383442	
		Diuron	0.0020	U	ug/L	P383442	
		Fenuron	0.016	U	ug/L	P383442	
		Fluridone**	0.010		ug/L	P383442	
		Imazapyr**	0.042		ug/L	P383442	
		Hydrocodone**	0.0020	U	ug/L	P383442	
		Ibuprofen**	0.020	U	ug/L	P383442	
		Imidacloprid	0.0095		ug/L	P383442	
		Linuron	0.0040	U	ug/L	P383442	
		Mandestrobin**	0.0020	U	ug/L	P383442	
		MCP	0.0020	U	ug/L	P383442	
		Naproxen**	0.0080	U	ug/L	P383442	
		Primidone**	0.0040	U	ug/L	P383442	
		Pyraclostrobin**	0.0020	U	ug/L	P383442	
		Thiamethoxam**	0.0020	U	ug/L	P383442	
		Tolfenpyrad**	0.0020	U	ug/L	P383442	
		Triclopyr**	0.0040	U	ug/L	P383442	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383351

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384096

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383469

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383429

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383482

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P383527

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383415

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383416

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P383341

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P383342

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

Reference Method: EPA 8321B
 Batch ID: P383328

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P383442

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P383442

Component	Result	Code	Units
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: P383356

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383534

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

Reference Method: SM 2540 C-2011
Batch ID: P383664

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383600

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383602

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P383530

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: P383736

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384096

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383469

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383474

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383429

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383482

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383415

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383416

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: P383341

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P383342

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

Reference Method: EPA 8321B
 Batch ID: P383328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	97.4		P	40 - 150
AMPA	117		P	40 - 150
Endothall	98.5		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	92.4		P	40 - 140
Sucralose	98.2		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P383442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	124		P	30 - 160
Acetaminophen	85.6		P	30 - 160
Acetamiprid	82.4		P	30 - 160
Afidopyropen	82.4		P	30 - 160
Bentazon	64.0		P	30 - 160
Benzovindiflupyr	75.2		P	30 - 160
Carbamazepine	72.5		P	30 - 160
Clothianidin	85.7		P	30 - 160
Dinotefuran	89.4		P	30 - 160
Diuron	58.7		P	30 - 160
Fenuron	99.0		P	30 - 160
Fluridone	90.1		P	30 - 160
Hydrocodone	93.8		P	30 - 160
Ibuprofen	64.0		P	30 - 160
Imazapyr	78.9		P	30 - 160
Imidacloprid	99.1		P	30 - 160
Linuron	61.3		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P383442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	79.9		P	30 - 160
MCP	126		P	30 - 160
Naproxen	67.0		P	30 - 160
Primidone	79.0		P	30 - 160
Pyraclostrobin	75.8		P	30 - 160
Thiamethoxam	73.7		P	30 - 160
Tolfenpyrad	50.8		P	30 - 160
Triclopyr	107		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P383356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177257	Chloride	104		P	90 - 110
2177365	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177257	Sulfate	101		P	90 - 110
2177365	Sulfate	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177963	Bromide	96.2	96.7	P/P	90 - 110
2178150	Bromide	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177319	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176943	Ammonia-N	109	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177266	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177308	Kjeldahl Nitrogen	96.7	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177290	NO2NO3-N	96.1	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176940	NO2NO3-N	98.3	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177220	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177266	Total-P	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177270	O-Phosphate-P	98.6	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177259	O-Phosphate-P	97.0	98.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177301	Acesulfame K	78.4	86.4	P/P	40 - 150
2177301	AMPA	103	114	P/P	40 - 150
2177301	Endothall	109	118	P/P	40 - 150
2177301	Glufosinate	99.4	100	P/P	40 - 150
2177301	Glyphosate	72.0	66.5	P/P	40 - 140
2177301	Sucralose	110	118	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P383442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176881	2,4-D	109	116	P/P	30 - 160
2176881	Acetaminophen	75.9	82.5	P/P	30 - 160
2176881	Acetamiprid	39.5	42.6	P/P	30 - 160
2176881	Afidopyropen	56.6	62.5	P/P	30 - 160
2176881	Bentazon	32.1	31.2	P/P	30 - 160
2176881	Benzovindiflupyr	65.7	72.4	P/P	30 - 160
2176881	Carbamazepine	47.2	45.1	P/P	30 - 160
2176881	Clothianidin	51.0	52.7	P/P	30 - 160
2176881	Dinotefuran	70.2	71.4	P/P	30 - 160
2176881	Diuron	37.7	39.4	P/P	30 - 160
2176881	Fenuron	51.6	54.6	P/P	30 - 160
2176881	Fluridone	73.0	83.7	P/P	30 - 160
2176881	Hydrocodone	64.8	67.3	P/P	30 - 160
2176881	Ibuprofen	76.3	69.7	P/P	30 - 160
2176881	Imazapyr	74.9	86.7	P/P	30 - 160
2176881	Imidacloprid	82.1	86.5	P/P	30 - 160
2176881	Linuron	47.2	51.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P383442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176881	Mandestrobin	69.2	76.4	P/P	30 - 160
2176881	MCPD	119	137	P/P	30 - 160
2176881	Naproxen	84.1	110	P/P	30 - 160
2176881	Primidone	54.5	56.8	P/P	30 - 160
2176881	Pyraclostrobin	70.8	79.5	P/P	30 - 160
2176881	Thiamethoxam	46.0	47.8	P/P	30 - 160
2176881	Tolfenpyrad	54.0	58.5	P/P	30 - 160
2176881	Triclopyr	114	134	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177365	Fluoride	99.9	98.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177324	Organic Carbon	104	108	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177265	Turbidity	6.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177257	Chloride	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177257	Sulfate	1.93	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177963	Bromide	0.391	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177319	Ammonia-N	0.438	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176943	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177266	Kjeldahl Nitrogen	0.0301	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177308	Kjeldahl Nitrogen	3.35	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177290	NO2NO3-N	0.460	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176940	NO2NO3-N	0.497	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177220	Total-P	0.169	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177266	Total-P	0.363	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177270	O-Phosphate-P	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177259	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P383328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177301	Acesulfame K	9.67	Spike	P	0 - 30
2177301	AMPA	8.46	Spike	P	0 - 30
2177301	Endothall	7.17	Spike	P	0 - 30
2177301	Glufosinate	0.728	Spike	P	0 - 30
2177301	Glyphosate	6.88	Spike	P	0 - 30
2177301	Sucralose	7.02	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P383442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176881	2,4-D	5.59	Spike	P	0 - 30
2176881	Acetaminophen	8.37	Spike	P	0 - 30
2176881	Acetamiprid	7.51	Spike	P	0 - 30
2176881	Afidopyropen	9.80	Spike	P	0 - 30
2176881	Bentazon	2.68	Spike	P	0 - 30
2176881	Benzovindiflupyr	9.74	Spike	P	0 - 30
2176881	Carbamazepine	4.60	Spike	P	0 - 30
2176881	Clothianidin	3.27	Spike	P	0 - 30
2176881	Dinotefuran	1.66	Spike	P	0 - 30
2176881	Diuron	4.60	Spike	P	0 - 30
2176881	Fenuron	5.65	Spike	P	0 - 30
2176881	Fluridone	13.6	Spike	P	0 - 30
2176881	Hydrocodone	3.83	Spike	P	0 - 30
2176881	Ibuprofen	9.06	Spike	P	0 - 30
2176881	Imazapyr	10.3	Spike	P	0 - 30
2176881	Imidacloprid	5.24	Spike	P	0 - 30
2176881	Linuron	7.95	Spike	P	0 - 30
2176881	Mandestrobin	9.88	Spike	P	0 - 30
2176881	MCPP	14.1	Spike	P	0 - 30
2176881	Naproxen	26.3	Spike	P	0 - 30
2176881	Primidone	4.11	Spike	P	0 - 30
2176881	Pyraclostrobin	11.6	Spike	P	0 - 30
2176881	Thiamethoxam	3.84	Spike	P	0 - 30
2176881	Tolfenpyrad	8.12	Spike	P	0 - 30
2176881	Triclopyr	16.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P383356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177323	Color (true)	0.713	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177365	Total Alkalinity	4.34	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177194	TDS	2.97	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177365	Fluoride	1.45	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177324	Organic Carbon	3.27	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2177301
Field Sample ID: 27010050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	117	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	45.4	P	30 - 160
EPA 8321B	Diuron-d6	40.5	P	30 - 160
EPA 8321B	Endothall-d6	141	P	50 - 160
EPA 8321B	Endothall-d6	141	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	72.8	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	72.8	P	50 - 160
EPA 8321B	Ibuprofen-d3	85.2	P	30 - 160
EPA 8321B	Primidone-d5	42.4	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	50 - 160
EPA 8321B	Sucralose-d6	119	P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99385

Included Lab Sample IDs: 2177288, 2177291

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.2	P/P	90 - 110
O-Phosphate-P	98.6	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99386

Included Lab Sample IDs: 2177286, 2177289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A99388

Included Lab Sample IDs: 2177289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A99391

Included Lab Sample IDs: 2177301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.8	105	P/P	60 - 160
Endothall	102	106	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99398

Included Lab Sample IDs: 2177290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99416

Included Lab Sample IDs: 2177301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	126	125	P/P	60 - 160
Glufosinate	124	115	P/P	60 - 160
Glyphosate	100	104	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99434

Included Lab Sample IDs: 2177287, 2177290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99436

Included Lab Sample IDs: 2177287, 2177290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110
Total-P	104	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99437

Included Lab Sample IDs: 2177301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.8	95.6	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99446

Included Lab Sample IDs: 2177287, 2177290

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

Reference Method: EPA 8321B

Run ID: A99453

Included Lab Sample IDs: 2177301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	147	P/P	50 - 150
Acetaminophen	112	110	P/P	60 - 160
Acetamiprid	107	107	P/P	50 - 150
Afidopyropen	126	110	P/P	50 - 150
Bentazon	108	107	P/P	50 - 160
Benzovindiflupyr	116	111	P/P	50 - 150
Carbamazepine	120	116	P/P	60 - 150
Clothianidin	105	103	P/P	60 - 150
Dinotefuran	113	112	P/P	50 - 150
Diuron	117	118	P/P	60 - 160
Fenuron	114	114	P/P	60 - 150
Fluridone	113	115	P/P	60 - 160
Hydrocodone	115	117	P/P	60 - 150
Ibuprofen	86.7	86.2	P/P	50 - 160
Imazapyr	95.3	97.5	P/P	50 - 150
Imidacloprid	109	108	P/P	60 - 150
Linuron	112	115	P/P	60 - 150
Mandestrobin	117	116	P/P	50 - 150
MCPP	105	106	P/P	50 - 150
Naproxen	98.8	87.5	P/P	50 - 160
Primidone	106	105	P/P	60 - 150
Pyraclostrobin	114	109	P/P	60 - 150
Thiamethoxam	86.6	105	P/P	50 - 150
Tolfenpyrad	118	117	P/P	60 - 150
Triclopyr	107	98.6	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99454

Included Lab Sample IDs: 2177287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99455

Included Lab Sample IDs: 2177286, 2177289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99455

Included Lab Sample IDs: 2177286, 2177289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	105	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99456

Included Lab Sample IDs: 2177287, 2177290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	108	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99546

Included Lab Sample IDs: 2177289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.9	98.3	P/P	90 - 110
Sulfate	97.9	99.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99696

Included Lab Sample IDs: 2177286

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	90.4	96.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					6.50	
EPA 300.0 Rev. 2.1	Bromide	96.0	96.2	96.7	97.2		0.391
	Chloride	100	104	102		1.71	
	Sulfate	101	101	99.9		1.93	
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	102			0.438
	Ammonia-N	103	109	107			1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	103	103			0.0301
	Kjeldahl Nitrogen	100	96.7	102			3.35
EPA 353.2 Rev. 2.0	NO2NO3-N	101	96.1	95.6			0.460
	NO2NO3-N	100	98.3	98.8			0.497
EPA 365.1 Rev. 2.0	Total-P	107	103	102			0.169
	Total-P	104	105	105			0.363
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	98.6	94.6			1.41
	O-Phosphate-P	101	97.0	98.2			1.23
EPA 8321B	2,4-D	124	109	116			5.59
	Acesulfame K	97.4	78.4	86.4			9.67
	Acetaminophen	85.6	75.9	82.5			8.37
	Acetamiprid	82.4	39.5	42.6			7.51
	Afidopyropen	82.4	56.6	62.5			9.80
	AMPA	117	103	114			8.46
	Bentazon	64.0	32.1	31.2			2.68
	Benzovindiflupyr	75.2	65.7	72.4			9.74
	Carbamazepine	72.5	47.2	45.1			4.60
	Clothianidin	85.7	51.0	52.7			3.27
	Dinotefuran	89.4	70.2	71.4			1.66
	Diuron	58.7	37.7	39.4			4.60
	Endothall	98.5	109	118			7.17
	Fenuron	99.0	51.6	54.6			5.65
	Fluridone	90.1	73.0	83.7			13.6
	Glufosinate	117	99.4	100			0.728
	Glyphosate	92.4	72.0	66.5			6.88
	Hydrocodone	93.8	64.8	67.3			3.83
	Ibuprofen	64.0	76.3	69.7			9.06
	Imazapyr	78.9	74.9	86.7			10.3
	Imidacloprid	99.1	82.1	86.5			5.24
	Linuron	61.3	47.2	51.1			7.95
	Mandestrobin	79.9	69.2	76.4			9.88
	MCPP	126	119	137			14.1
	Naproxen	67.0	84.1	110			26.3
	Primidone	79.0	54.5	56.8			4.11
	Pyraclostrobin	75.8	70.8	79.5			11.6
	Sucralose	98.2	110	118			7.02
	Thiamethoxam	73.7	46.0	47.8			3.84
	Tolfenpyrad	50.8	54.0	58.5			8.12
	Triclopyr	107	114	134			16.1
SM 2120 B-2011	Color (true)	102				0.713	
SM 2320 B-2011	Total Alkalinity	99.4				4.34	
SM 2540 C-2011	TDS					2.97	
SM 4500 F-C-2011	Fluoride	99.2	99.9	98.2			1.45
SM 5310 B-2011	Organic Carbon	107	104	108			3.27

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2177286, 2177289
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2177286
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2177289
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2177289
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2177287, 2177290
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2177287, 2177290
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2177287, 2177290
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2177287, 2177290
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2177288, 2177291
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2177301
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2177301
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2177289
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2177286, 2177289
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2177289
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2177286, 2177289
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2177286, 2177289
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2177287, 2177290

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	06/17/2020			06/17/2020 15:47	Yen Ta	2177286, 2177289
EPA 300.0 Rev. 2.1	06/17/2020			06/23/2020 17:20	Elliott Rodriguez	2177289
	06/17/2020			07/01/2020 22:12	Jhamieka S. Greenwood	2177286
EPA 350.1 Rev. 2.0	06/17/2020			06/20/2020 12:55	Ping Hua	2177290
	06/17/2020			06/20/2020 15:37	Ping Hua	2177287
EPA 351.2 Rev. 2.0	06/17/2020	06/19/2020 10:40	Elliott Rodriguez	06/22/2020 12:34	Jhamieka S. Greenwood	2177287
	06/17/2020	06/19/2020 10:40	Elliott Rodriguez	06/22/2020 12:55	Jhamieka S. Greenwood	2177290
EPA 353.2 Rev. 2.0	06/17/2020			06/18/2020 09:16	Beverly Y. Sanders	2177290
	06/17/2020			06/23/2020 08:33	Beverly Y. Sanders	2177287
EPA 365.1 Rev. 2.0	06/17/2020	06/18/2020 12:09	Yen Ta	06/19/2020 09:22	Lipi Saha	2177290
	06/17/2020	06/18/2020 12:09	Yen Ta	06/19/2020 09:35	Lipi Saha	2177287
EPA 365.1 Rev. 2.0 dissolved	06/17/2020			06/17/2020 15:34	Carlos Miranda	2177288
	06/17/2020			06/17/2020 15:45	Carlos Miranda	2177291
EPA 8321B	06/17/2020	06/17/2020 13:30	Rebecca Ware	06/17/2020 21:57	Rebecca Ware	2177301
	06/17/2020	06/17/2020 13:30	Rebecca Ware	06/18/2020 11:55	Rebecca Ware	2177301
	06/17/2020	06/17/2020 13:30	Rebecca Ware	06/19/2020 17:18	Rebecca Ware	2177301
	06/17/2020	06/22/2020 09:00	Hoor Shaik	06/23/2020 03:30	Juyoung Kim	2177301
SM 2120 B-2011	06/17/2020			06/17/2020 17:07	Benjamin T. Nordmann	2177289
SM 2320 B-2011	06/17/2020			06/18/2020 21:52	Dale L. Simmons	2177289
	06/17/2020			06/18/2020 22:05	Dale L. Simmons	2177286
SM 2540 C-2011	06/17/2020			06/18/2020 14:01	Yijie Li	2177289
SM 2540 D-2011	06/17/2020			06/18/2020 14:01	Yijie Li	2177286, 2177289
SM 4500 F-C-2011	06/17/2020			06/18/2020 21:52	Dale L. Simmons	2177289
	06/17/2020			06/18/2020 22:05	Dale L. Simmons	2177286
SM 5310 B-2011	06/17/2020			06/22/2020 17:23	David Boose	2177287
	06/17/2020			06/22/2020 17:36	David Boose	2177290