

Chemical Analysis Report

NE-DIST-2020-06-18-01

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

Event Description: **Nassau North 2 2020**
Request ID: **RQ-2020-05-04-38**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 09-JUL-2020 10:02



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: Metals, 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: Little St. Mary's River at White Oak Rd

Collection Date/Time: 06/17/2020 13:15

Field ID: G4NE0289

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177534	EPA 180.1 Rev. 2.0	Turbidity	4.2	A	NTU	P383410	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P383737	
		Sulfate	1.9		mg SO4/L	P383740	
	SM 2120 B-2011	Color (true)	450		PCU	P383422	
	SM 2320 B-2011	Total Alkalinity	9.3		mg CaCO3/L	P383551	
	SM 2540 C-2011	TDS	126		mg/L	P383591	
	SM 2540 D-2011	TSS	2	U	mg/L	P383585	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P383555	
2177535	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P383472	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P383652	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P383427	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P383505	
	SM 5310 B-2011	Organic Carbon	40		mg C/L	P383531	
2177536	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P383420	
2177568	EPA 200.7 Rev. 4.4	Barium	16.2		ug/L	P383574	
		Calcium	5.79		mg/L	P383574	
		Iron	940		ug/L	P383574	
		Magnesium	2.50		mg/L	P383574	
		Potassium	0.98	I	mg/L	P383574	
		Sodium	8.2		mg/L	P383574	
		Zinc	7.2	I	ug/L	P383574	
	EPA 200.8 Rev. 5.4	Aluminum	611		ug/L	P383574	
		Antimony	0.050	U	ug/L	P383574	
		Arsenic	0.70		ug/L	P383574	
		Boron**	22.1		ug/L	P383574	
		Cadmium	0.020	U	ug/L	P383845	
		Chromium	1.0	I	ug/L	P383574	
		Copper	1.78		ug/L	P383574	
		Lead	0.65		ug/L	P383845	
		Nickel	0.76	I	ug/L	P383574	
		Selenium	0.24	I	ug/L	P383574	
		Silver	0.010	U	ug/L	P383574	
		Thallium	0.10	U	ug/L	P383574	
		Hardness	24.8		mg/L	P383574	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/06/2020.

Sample Location: Lofton Cr @ A1A

Collection Date/Time: 06/17/2020 12:00

Field ID: 19020003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177543	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P383410	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P383737	
		Sulfate	2.7		mg SO4/L	P383740	
	SM 2120 B-2011	Color (true)	770		PCU	P383422	
	SM 2320 B-2011	Total Alkalinity	7.9		mg CaCO3/L	P383551	
	SM 2540 C-2011	TDS	188		mg/L	P383591	
	SM 2540 D-2011	TSS	2	I	mg/L	P383585	
	SM 4500 F-C-2011	Fluoride	0.051	I	mg F/L	P383555	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P383472	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P383652	
2177544	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P383427	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P383505	
	SM 5310 B-2011	Organic Carbon	60		mg C/L	P383531	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.052		mg P/L	P383420	
	dissolved						

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: Egans Creek at N.14th

Collection Date/Time: 06/17/2020 11:00

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177537	EPA 180.1 Rev. 2.0	Turbidity	10	A	NTU	P383412	
	EPA 300.0 Rev. 2.1	Bromide	42		mg Br/L	P384096	
	SM 2320 B-2011	Total Alkalinity	112	A	mg CaCO3/L	P383554	
	SM 2540 D-2011	TSS	15		mg/L	P383587	
	SM 4500 F-C-2011	Fluoride	0.95		mg F/L	P383558	
2177539	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P383474	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P383564	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P383528	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P383506	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P383532	
2177541	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P383419	

Sample Location: Escambia Slough at Escambia St

Collection Date/Time: 06/17/2020 10:40

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177546	EPA 180.1 Rev. 2.0	Turbidity	7.4		NTU	P383412	
	EPA 300.0 Rev. 2.1	Bromide	29		mg Br/L	P384096	
	SM 2320 B-2011	Total Alkalinity	114		mg CaCO3/L	P383554	
	SM 2540 D-2011	TSS	13		mg/L	P383587	
	SM 4500 F-C-2011	Fluoride	0.67		mg F/L	P383558	
2177547	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P383474	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P383564	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P383528	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P383506	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P383532	
2177548	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P383419	
2177567	EPA 8321B	2,4-D	0.0020	U	ug/L	P383442	
		Acesulfame K**	0.10	UJ	ug/L	P383394	MS, SUR
		AMPA**	1.0	UJ	ug/L	P383394	MS
		Sucralose**	0.096		ug/L	P383394	
		Acetaminophen**	0.0080	U	ug/L	P383442	
		Acetamiprid**	0.0020	U	ug/L	P383442	
		Endothall**	0.25	UJ	ug/L	P383394	MS, SUR
		Glufosinate**	1.0	UJ	ug/L	P383394	MS
		Glyphosate**	1.0	UJ	ug/L	P383394	MS
		Afidopyropen**	0.0020	U	ug/L	P383442	
		Bentazon	0.029		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	0.0024	I	ug/L	P383442	
		Fenuron	0.016	U	ug/L	P383442	
		Fluridone**	8.0E-04	U	ug/L	P383442	
		Imazapyr**	0.011	I	ug/L	P383442	
		Hydrocodone**	0.0020	U	ug/L	P383442	
		Ibuprofen**	0.020	U	ug/L	P383442	
		Imidacloprid	0.0020	U	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	

Field ID: G4NE0287

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 8321B: MDL for some parameters elevated due to matrix interference. Precision for AMPA, glufosinate, and glyphosate is not available due to no recoveries in the duplicate matrix spikes. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Egans Creek at Atlantic

Collection Date/Time: 06/17/2020 11:30

Field ID: G4NE0285

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177538	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P383412	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P384096	
	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P383554	
	SM 2540 D-2011	TSS	17	A	mg/L	P383587	
	SM 4500 F-C-2011	Fluoride	0.76		mg F/L	P383558	
2177540	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P383474	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P383564	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P383528	
	EPA 365.1 Rev. 2.0	Total-P	0.47		mg P/L	P383506	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P383532	
2177542	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.30		mg P/L	P383419	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383410

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383412

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383574

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383574

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383845

Component	Result	Code	Units
Cadmium	0.020	U	ug/L
Lead	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

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: P383472

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: P383564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383427

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383528

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383419

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

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

Reference Method: EPA 8321B
Batch ID: P383394

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P383442

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P383422

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383551

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

Reference Method: SM 2320 B-2011
Batch ID: P383554

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

Reference Method: SM 2540 C-2011
Batch ID: P383591

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383585

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383587

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383555

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383558

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: P383531

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P383532

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	105		P	85 - 115
Iron	102		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.1		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	101		P	85 - 115
Boron	96.0		P	85 - 115
Chromium	100		P	85 - 115
Copper	101		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.5		P	85 - 115
Silver	104		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	101		P	85 - 115
Lead	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

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: P383472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	102		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: P383564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383427

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383528

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: P383505

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383419

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	82.1		P	40 - 150
AMPA	119		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	118		P	40 - 150
Glyphosate	96.5		P	40 - 140
Sucralose	95.5		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
Mandestrobin	79.9		P	30 - 160
MCPP	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: P383422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.1		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P383551

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

Reference Method: SM 2320 B-2011
Batch ID: P383554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P383558

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P383532

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177348	Barium	105		P	80 - 120
2177348	Calcium	102		P	80 - 120
2177348	Iron	102		P	80 - 120
2177348	Magnesium	103		P	80 - 120
2177348	Potassium	98.6		P	80 - 120
2177348	Sodium	100		P	80 - 120
2177348	Zinc	105		P	80 - 120
2177938	Barium	104	103	P/P	80 - 120
2177938	Calcium	108	107	P/P	80 - 120
2177938	Iron	104	105	P/P	80 - 120
2177938	Magnesium	104	106	P/P	80 - 120
2177938	Potassium	105	105	P/P	80 - 120
2177938	Sodium	103	103	P/P	80 - 120
2177938	Zinc	105	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177348	Aluminum	98.6		P	80 - 120
2177348	Antimony	100		P	80 - 120
2177348	Arsenic	101		P	80 - 120
2177348	Boron	100		P	80 - 120
2177348	Chromium	103		P	80 - 120
2177348	Copper	103		P	80 - 120
2177348	Nickel	99.0		P	80 - 120
2177348	Selenium	99.8		P	80 - 120
2177348	Silver	105		P	80 - 120
2177348	Thallium	103		P	80 - 120
2177938	Aluminum	96.7	94.6	P/P	80 - 120
2177938	Antimony	98.9	99.1	P/P	80 - 120
2177938	Arsenic	99.8	99.0	P/P	80 - 120
2177938	Boron	95.7	94.9	P/P	80 - 120
2177938	Chromium	98.9	100	P/P	80 - 120
2177938	Copper	101	102	P/P	80 - 120
2177938	Nickel	98.3	98.8	P/P	80 - 120
2177938	Selenium	95.7	95.6	P/P	80 - 120
2177938	Silver	103	103	P/P	80 - 120
2177938	Thallium	99.2	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177311	Cadmium	103	105	P/P	80 - 120
2177311	Lead	107	110	P/P	80 - 120
2177347	Cadmium	101		P	80 - 120
2177347	Lead	106		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177487	Chloride	101		P	90 - 110
2177628	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177487	Sulfate	102		P	90 - 110
2177628	Sulfate	101		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: P383472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177419	Ammonia-N	106	109	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: P383564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177526	Kjeldahl Nitrogen	94.5	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177553	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177419	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177523	NO2NO3-N	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177515	Total-P	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177522	Total-P	98.1	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177595	O-Phosphate-P	94.6	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177579	O-Phosphate-P	94.9	94.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177567	Acesulfame K	36.6	36.9	F/F	40 - 150
2177567	AMPA	0.0	0.0	F/F	40 - 150
2177567	Endothall	764	755	F/F	40 - 150
2177567	Glufosinate	0.0	0.0	F/F	40 - 150
2177567	Glyphosate	0.0	0.0	F/F	40 - 140
2177567	Sucralose	94.4	96.0	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	Afidopyrophen	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	MCCP	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: P383555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177151	Fluoride	105	102	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P383558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177537	Fluoride	103	105	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177370	Organic Carbon	98.9	104	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P383532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177547	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177534	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177537	Turbidity	2.96	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177938	Barium	0.658	Spike	P	0 - 20
2177938	Calcium	0.157	Spike	P	0 - 20
2177938	Iron	1.11	Spike	P	0 - 20
2177938	Magnesium	1.38	Spike	P	0 - 20
2177938	Potassium	0.489	Spike	P	0 - 20
2177938	Sodium	0.142	Spike	P	0 - 20
2177938	Zinc	0.525	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177938	Aluminum	1.98	Spike	P	0 - 20
2177938	Antimony	0.232	Spike	P	0 - 20
2177938	Arsenic	0.718	Spike	P	0 - 20
2177938	Boron	0.767	Spike	P	0 - 20
2177938	Chromium	1.17	Spike	P	0 - 20
2177938	Copper	0.998	Spike	P	0 - 20
2177938	Nickel	0.536	Spike	P	0 - 20
2177938	Selenium	0.171	Spike	P	0 - 20
2177938	Silver	0.497	Spike	P	0 - 20
2177938	Thallium	1.13	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177311	Cadmium	2.52	Spike	P	0 - 20
2177311	Lead	2.20	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177487	Chloride	0.106	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177487	Sulfate	0.342	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: P383472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177419	Ammonia-N	2.50	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: P383564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177526	Kjeldahl Nitrogen	4.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177553	Kjeldahl Nitrogen	2.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177419	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177523	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177515	Total-P	3.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177522	Total-P	0.989	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177595	O-Phosphate-P	0.400	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177579	O-Phosphate-P	0.211	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P383394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177567	Acesulfame K	0.881	Spike	P	0 - 30
2177567	Endothall	1.19	Spike	P	0 - 30
2177567	Sucralose	1.60	Spike	P	0 - 30

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

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	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: P383422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177628	Color (true)	0.782	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177151	Total Alkalinity	0.644	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P383554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177537	Total Alkalinity	0.207	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177627	TDS	0.593	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P383587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177538	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177151	Fluoride	2.53	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P383558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177537	Fluoride	1.89	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177370	Organic Carbon	3.18	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P383532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177547	Organic Carbon	0.552	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2177567
Field Sample ID: G4NE0287

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	149	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.8	P	30 - 160
EPA 8321B	Diuron-d6	58.6	P	30 - 160
EPA 8321B	Endothall-d6	881	F	50 - 160
EPA 8321B	Endothall-d6	881	F	50 - 160
EPA 8321B	Glyphosate 13C 15N	77.5	P	50 - 160
EPA 8321B	Glyphosate 13C 15N	77.5	P	50 - 160
EPA 8321B	Ibuprofen-d3	79.8	P	30 - 160
EPA 8321B	Primidone-d5	75.3	P	30 - 160
EPA 8321B	Sucralose-d6	98.2	P	50 - 160
EPA 8321B	Sucralose-d6	98.2	P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99407

Included Lab Sample IDs: 2177534, 2177537, 2177538, 2177543, 2177546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99408

Included Lab Sample IDs: 2177536, 2177541, 2177542, 2177545, 2177548

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.6	P/P	90 - 110
O-Phosphate-P	98.5	98.6	P/P	90 - 110
O-Phosphate-P	98.6	98.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A99409

Included Lab Sample IDs: 2177534, 2177543

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115
Color (true)	99.7	99.3	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99414

Included Lab Sample IDs: 2177535, 2177544

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

Reference Method: EPA 8321B

Run ID: A99416

Included Lab Sample IDs: 2177567

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	125	124	P/P	60 - 160
Glufosinate	115	118	P/P	60 - 160
Glyphosate	104	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A99424

Included Lab Sample IDs: 2177567

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	85.3	76.5	P/P	60 - 160
Endothall	105	105	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99434

Included Lab Sample IDs: 2177535, 2177539, 2177540, 2177544, 2177547

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99434

Included Lab Sample IDs: 2177535, 2177539, 2177540, 2177544, 2177547

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

Reference Method: EPA 8321B

Run ID: A99437

Included Lab Sample IDs: 2177567

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.6	93.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A99453

Included Lab Sample IDs: 2177567

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99454

Included Lab Sample IDs: 2177539, 2177540, 2177547

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A99456

Included Lab Sample IDs: 2177535, 2177539, 2177540, 2177544, 2177547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	107	P/P	90 - 110
Organic Carbon	101	102	P/P	90 - 110
Organic Carbon	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99462

Included Lab Sample IDs: 2177534, 2177537, 2177538, 2177543, 2177546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	98.7	P/P	90 - 110
Total Alkalinity	99.2	98.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99462

Included Lab Sample IDs: 2177534, 2177537, 2177538, 2177543, 2177546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	101	P/P	90 - 110
Fluoride	101	104	P/P	90 - 110
Fluoride	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99463

Included Lab Sample IDs: 2177540, 2177544, 2177547

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99483

Included Lab Sample IDs: 2177535, 2177539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.2	93.8	P/P	90 - 110
Total-P	93.8	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99490

Included Lab Sample IDs: 2177539, 2177540, 2177547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	94.6	P/P	90 - 110
Kjeldahl Nitrogen	98.4	96.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A99503

Included Lab Sample IDs: 2177568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A99503

Included Lab Sample IDs: 2177568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	100	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	101	98.6	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99546

Included Lab Sample IDs: 2177534, 2177543

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	97.6	P/P	90 - 110
Sulfate	99.9	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99553

Included Lab Sample IDs: 2177535, 2177544

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	94.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A99559

Included Lab Sample IDs: 2177568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.9	99.8	P/P	90 - 110
Antimony	99.9	100	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Boron	97.9	99.6	P/P	90 - 110
Chromium	97.3	99.5	P/P	90 - 110
Copper	98.8	100	P/P	90 - 110
Nickel	98.9	100	P/P	90 - 110
Selenium	99.6	100	P/P	90 - 110
Silver	102	105	P/P	90 - 110
Thallium	98.5	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A99666

Included Lab Sample IDs: 2177568

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	100	100	P/P	90 - 110
Lead	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99696

Included Lab Sample IDs: 2177537, 2177538, 2177546

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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.19	
	Turbidity						2.96	
EPA 200.7 Rev. 4.4	Barium	102	105	104	103			0.658
	Calcium	105	102	108	107			0.157
	Iron	102	102	104	105			1.11
	Magnesium	103	103	104	106			1.38
	Potassium	99.1	98.6	105	105			0.489
	Sodium	103	100	103	103			0.142
	Zinc	103	105	105	106			0.525
EPA 200.8 Rev. 5.4	Aluminum	96.1	96.7	94.6	98.6			1.98
	Antimony	100	98.9	99.1	100			0.232
	Arsenic	101	99.8	99.0	101			0.718
	Boron	96.0	95.7	94.9	100			0.767
	Cadmium	101	103	105	101			2.52
	Chromium	100	98.9	100	103			1.17
	Copper	101	101	102	103			0.998
	Lead	104	107	110	106			2.20
	Nickel	100	98.3	98.8	99.0			0.536
	Selenium	98.5	95.7	95.6	99.8			0.171
	Silver	104	103	103	105			0.497
	Thallium	100	99.2	100	103			1.13
EPA 300.0 Rev. 2.1	Bromide	96.0	96.2	96.7	97.2			0.391
	Chloride	100	101	107			0.106	
	Sulfate	101	102	101			0.342	
EPA 350.1 Rev. 2.0	Ammonia-N	102	106	109				2.50
	Ammonia-N	103	109	107				1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	94.5	98.8				4.04
	Kjeldahl Nitrogen	99.3	104	108				2.52
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.5	99.5				0.0
	NO ₂ NO ₃ -N	102	101	100				0.496
EPA 365.1 Rev. 2.0	Total-P	104	102	107				3.93
	Total-P	105	98.1	99.1				0.989
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	94.6	95.1				0.400
	O-Phosphate-P	96.8	94.9	94.7				0.211
EPA 8321B	2,4-D	124	109	116				5.59
	Acesulfame K	82.1	36.6	36.9				0.881
	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	119	0.0	0.0				
	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	103	764	755				1.19
	Fenuron	99.0	51.6	54.6				5.65
	Fluridone	90.1	73.0	83.7				13.6
	Glufosinate	118	0.0	0.0				
	Glyphosate	96.5	0.0	0.0				
	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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	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	95.5	94.4	96.0		1.60
	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)	97.1			0.782	
SM 2320 B-2011	Total Alkalinity	99.4			0.644	
	Total Alkalinity	99.1			0.207	
SM 2540 C-2011	TDS				0.593	
SM 2540 D-2011	TSS				0.0	
SM 4500 F-C-2011	Fluoride	97.1	105	102		2.53
	Fluoride	96.6	103	105		1.89
SM 5310 B-2011	Organic Carbon	103	98.9	104		3.18
	Organic Carbon	103	102	103		0.552

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2177534, 2177537, 2177538, 2177543, 2177546
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2177568
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2177568
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2177537, 2177538, 2177546
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2177534, 2177543
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2177534, 2177543
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2177535, 2177539, 2177540, 2177544, 2177547
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2177535, 2177539, 2177540, 2177544, 2177547
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2177535, 2177539, 2177540, 2177544, 2177547
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2177535, 2177539, 2177540, 2177544, 2177547
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2177536, 2177541, 2177542, 2177545, 2177548
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2177567
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2177567
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2177534, 2177543
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2177534, 2177537, 2177538, 2177543, 2177546
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2177568
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2177534, 2177543
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2177534, 2177537, 2177538, 2177543, 2177546
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2177534, 2177537, 2177538, 2177543, 2177546

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2177535, 2177539, 2177540, 2177544, 2177547

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	06/18/2020			06/18/2020 14:56	Yen Ta	2177534, 2177537, 2177538, 2177543, 2177546
EPA 200.7 Rev. 4.4	06/18/2020	06/23/2020 14:45	Elliott D. Healy	06/24/2020 16:56	Betina Topolski	2177568
EPA 200.8 Rev. 5.4	06/18/2020	06/23/2020 14:45	Elliott D. Healy	06/27/2020 01:35	Alexander Thompson	2177568
	06/18/2020	06/30/2020 11:30	Alexander Thompson	07/02/2020 18:46	Alexander Thompson	2177568
EPA 300.0 Rev. 2.1	06/18/2020			06/23/2020 23:38	Elliott Rodriguez	2177534
	06/18/2020			06/23/2020 23:51	Elliott Rodriguez	2177543
	06/18/2020			07/01/2020 22:29	Jhamieka S. Greenwood	2177537
	06/18/2020			07/01/2020 22:46	Jhamieka S. Greenwood	2177538
	06/18/2020			07/01/2020 23:03	Jhamieka S. Greenwood	2177546
EPA 350.1 Rev. 2.0	06/18/2020			06/20/2020 14:21	Ping Hua	2177535
	06/18/2020			06/20/2020 14:22	Ping Hua	2177544
	06/18/2020			06/20/2020 15:39	Ping Hua	2177539
	06/18/2020			06/20/2020 15:40	Ping Hua	2177540
	06/18/2020			06/20/2020 15:48	Ping Hua	2177547
EPA 351.2 Rev. 2.0	06/18/2020	06/23/2020 09:35	Sima Feizi	06/24/2020 12:45	Jhamieka S. Greenwood	2177539
	06/18/2020	06/23/2020 09:35	Sima Feizi	06/24/2020 12:47	Jhamieka S. Greenwood	2177540
	06/18/2020	06/23/2020 09:35	Sima Feizi	06/24/2020 12:52	Jhamieka S. Greenwood	2177547
	06/18/2020	06/25/2020 09:40	Sima Feizi	06/26/2020 10:01	Jhamieka S. Greenwood	2177535
	06/18/2020	06/25/2020 09:40	Sima Feizi	06/26/2020 10:03	Jhamieka S. Greenwood	2177544
EPA 353.2 Rev. 2.0	06/18/2020			06/19/2020 08:55	Beverly Y. Sanders	2177535
	06/18/2020			06/19/2020 08:56	Beverly Y. Sanders	2177544
	06/18/2020			06/23/2020 08:51	Beverly Y. Sanders	2177539
	06/18/2020			06/23/2020 08:52	Beverly Y. Sanders	2177540
	06/18/2020			06/23/2020 08:53	Beverly Y. Sanders	2177547
EPA 365.1 Rev. 2.0	06/18/2020	06/22/2020 14:35	Yen Ta	06/23/2020 08:57	Benjamin T. Nordmann	2177544
	06/18/2020	06/22/2020 14:35	Yen Ta	06/23/2020 09:17	Benjamin T. Nordmann	2177540
	06/18/2020	06/22/2020 14:35	Yen Ta	06/23/2020 09:20	Benjamin T. Nordmann	2177547
	06/18/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:52	Lipi Saha	2177535
	06/18/2020	06/22/2020 14:35	Yen Ta	06/24/2020 08:11	Lipi Saha	2177539
EPA 365.1 Rev. 2.0 dissolved	06/18/2020			06/18/2020 15:39	Jhamieka S. Greenwood	2177542
	06/18/2020			06/18/2020 15:53	Jhamieka S. Greenwood	2177545
	06/18/2020			06/18/2020 15:54	Jhamieka S. Greenwood	2177536
	06/18/2020			06/18/2020 16:13	Jhamieka S. Greenwood	2177541
	06/18/2020			06/18/2020 16:14	Jhamieka S. Greenwood	2177548
EPA 8321B	06/18/2020	06/18/2020 13:00	Rebecca Ware	06/18/2020 13:59	Rebecca Ware	2177567
	06/18/2020	06/18/2020 13:00	Rebecca Ware	06/19/2020 11:51	Rebecca Ware	2177567
	06/18/2020	06/18/2020 13:00	Rebecca Ware	06/19/2020 19:15	Rebecca Ware	2177567
	06/18/2020	06/22/2020 09:00	Hoor Shaik	06/23/2020 05:14	Juyoung Kim	2177567
SM 2120 B-2011	06/18/2020			06/18/2020 16:38	Madeline Gruver	2177534

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	06/18/2020			06/18/2020 16:52	Madeline Gruver	2177543
SM 2320 B-2011	06/18/2020			06/22/2020 21:29	Dale L. Simmons	2177534
	06/18/2020			06/22/2020 21:42	Dale L. Simmons	2177543
	06/18/2020			06/23/2020 08:30	Dale L. Simmons	2177537
	06/18/2020			06/23/2020 08:42	Dale L. Simmons	2177538
	06/18/2020			06/23/2020 08:54	Dale L. Simmons	2177546
SM 2340B	06/18/2020			06/24/2020 16:56	Betina Topolski	2177568
SM 2540 C-2011	06/18/2020			06/19/2020 19:40	Madeline Gruver	2177534, 2177543
SM 2540 D-2011	06/18/2020			06/19/2020 20:20	Madeline Gruver	2177534, 2177537, 2177538, 2177543, 2177546
SM 4500 F-C-2011	06/18/2020			06/22/2020 21:29	Dale L. Simmons	2177534
	06/18/2020			06/22/2020 21:42	Dale L. Simmons	2177543
	06/18/2020			06/23/2020 06:53	Dale L. Simmons	2177537
	06/18/2020			06/23/2020 07:06	Dale L. Simmons	2177538
	06/18/2020			06/23/2020 07:44	Dale L. Simmons	2177546
SM 5310 B-2011	06/18/2020			06/23/2020 00:05	David Boose	2177535
	06/18/2020			06/23/2020 00:20	David Boose	2177544
	06/18/2020			06/23/2020 03:19	David Boose	2177547
	06/18/2020			06/23/2020 05:22	David Boose	2177539
	06/18/2020			06/23/2020 05:35	David Boose	2177540