

Chemical Analysis Report

NE-DIST-2019-10-09-02

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

Event Description: **Interlachen 1**
Request ID: **RQ-2019-09-30-10**
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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 29-OCT-2019 11:10

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: Metals and Nutrients.

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: Georges Lake NE Sector

Collection Date/Time: 10/08/2019 11:25

Field ID: 20030914

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126549	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P372218	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P372759	
		Sulfate	4.1		mg SO4/L	P372763	
		Color (true)	29	A	PCU	P372294	
	SM 2320 B-97	Total Alkalinity	1.9	I	mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	31		mg/L	P372816	
	SM 2540 D-97	TSS	3	I	mg/L	P372825	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P372641	
2126551	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P372560	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P372339	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372437	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P372342	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P372323	
2126553	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372258	
2126565	EPA 200.7 Rev. 4.4	Barium	3.8	I	ug/L	P372277	
		Calcium	4.82		mg/L	P372277	
		Iron	39	I	ug/L	P372277	
		Magnesium	1.97		mg/L	P372277	
		Potassium	0.50	I	mg/L	P372277	
		Sodium	5.8		mg/L	P372277	
		Zinc	5.0	U	ug/L	P372277	
	EPA 200.8 Rev. 5.4	Aluminum	60		ug/L	P372277	
		Antimony	0.084	I	ug/L	P372277	
		Arsenic	5.03		ug/L	P372277	
		Boron**	19.8		ug/L	P372277	
		Cadmium	0.020	U	ug/L	P372277	
		Chromium	0.40	U	ug/L	P372277	
		Copper	2.28		ug/L	P372277	
		Lead	0.20	U	ug/L	P372277	
		Nickel	0.50	U	ug/L	P372277	
		Selenium	0.20	U	ug/L	P372277	
		Silver	0.015	I	ug/L	P372277	
		Thallium	0.10	U	ug/L	P372277	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Georges Lake Center

Collection Date/Time: 10/08/2019 11:30

Field ID: 20030417

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126550	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P372218	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P372759	
		Sulfate	4.1		mg SO4/L	P372763	
		Color (true)	29		PCU	P372294	
	SM 2320 B-97	Total Alkalinity	1.9	I	mg CaCO3/L	P372638	
	SM 2540 C-97	TDS	32		mg/L	P372816	
	SM 2540 D-97	TSS	3	I	mg/L	P372825	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P372641	
2126552	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P372560	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P372339	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372437	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P372345	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P372323	
2126554	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372258	
2126566	EPA 200.7 Rev. 4.4	Barium	3.6	I	ug/L	P372277	
		Calcium	2.64		mg/L	P372277	
		Iron	53	I	ug/L	P372277	
		Magnesium	0.90		mg/L	P372277	
		Potassium	0.50	I	mg/L	P372277	
		Sodium	5.3		mg/L	P372277	
		Zinc	5.0	U	ug/L	P372277	
	EPA 200.8 Rev. 5.4	Aluminum	63		ug/L	P372277	
		Antimony	0.087	I	ug/L	P372277	
		Arsenic	5.20		ug/L	P372277	
		Boron**	20.3		ug/L	P372277	
		Cadmium	0.020	U	ug/L	P372277	
		Chromium	0.40	U	ug/L	P372277	
		Copper	0.52	I	ug/L	P372277	
		Lead	0.20	U	ug/L	P372277	
		Nickel	0.50	U	ug/L	P372277	
		Selenium	0.20	U	ug/L	P372277	
		Silver	0.010	U	ug/L	P372277	
		Thallium	0.10	U	ug/L	P372277	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Smith Lake Center

Collection Date/Time: 10/08/2019 12:25

Field ID: G2NE1156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126555	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P372218	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P372759	
		Sulfate	0.43	I	mg SO4/L	P372763	
	SM 2120 B	Color (true)	24		PCU	P372294	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P372639	
	SM 2540 C-97	TDS	30		mg/L	P372817	
	SM 2540 D-97	TSS	2	U	mg/L	P372826	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372642	
2126557	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P372560	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P372339	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372437	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P372388	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P372323	
2126559	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372258	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Church Lake Center

Collection Date/Time: 10/08/2019 10:10

Field ID: G1NE0867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2126556	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P372218	
	EPA 300.0 Rev. 2.1	Chloride	5.5		mg Cl/L	P372759	
		Sulfate	2.9		mg SO4/L	P372763	
	SM 2120 B	Color (true)	10		PCU	P372294	
	SM 2320 B-97	Total Alkalinity	4.5		mg CaCO3/L	P372639	
	SM 2540 C-97	TDS	27		mg/L	P372817	
	SM 2540 D-97	TSS	2	U	mg/L	P372826	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372642	
2126558	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P372560	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P372339	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372437	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P372388	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P372323	
2126560	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P372258	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372218

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372277

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: P372277

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
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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 300.0 Rev. 2.1
Batch ID: P372759

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372763

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372560

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372339

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372437

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372342

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372345

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372388

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372258

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

Reference Method: SM 2120 B
Batch ID: P372294

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372638

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

Reference Method: SM 2320 B-97
Batch ID: P372639

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P372816

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P372817

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372825

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372826

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P372642

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P372323

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: P372277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	109		P	85 - 115
Iron	104		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	107		P	85 - 115
Sodium	99.5		P	85 - 115
Zinc	97.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	85 - 115
Antimony	106		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	101		P	85 - 115
Copper	102		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Selenium	98.7		P	85 - 115
Silver	104		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372759

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372763

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372339

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372437

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: P372342

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372258

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

Reference Method: SM 2120 B
Batch ID: P372294

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

Reference Method: SM 2320 B-97
Batch ID: P372638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P372639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P372642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P372323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126324	Barium	96.7	98.5	P/P	80 - 120
2126324	Calcium	106	107	P/P	80 - 120
2126324	Iron	100	101	P/P	80 - 120
2126324	Magnesium	106	107	P/P	80 - 120
2126324	Potassium	106	106	P/P	80 - 120
2126324	Sodium	98.9		P	80 - 120
2126324	Zinc	95.0	96.8	P/P	80 - 120
2126664	Barium	96.4		P	80 - 120
2126664	Calcium	103		P	80 - 120
2126664	Iron	103		P	80 - 120
2126664	Magnesium	103		P	80 - 120
2126664	Potassium	100		P	80 - 120
2126664	Sodium	100		P	80 - 120
2126664	Zinc	94.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126324	Aluminum	103	106	P/P	80 - 120
2126324	Antimony	106	109	P/P	80 - 120
2126324	Arsenic	106	108	P/P	80 - 120
2126324	Boron	104	106	P/P	80 - 120
2126324	Cadmium	103	104	P/P	80 - 120
2126324	Chromium	103	104	P/P	80 - 120
2126324	Copper	103	105	P/P	80 - 120
2126324	Lead	101	105	P/P	80 - 120
2126324	Nickel	104	104	P/P	80 - 120
2126324	Selenium	98.6	99.1	P/P	80 - 120
2126324	Silver	104	107	P/P	80 - 120
2126324	Thallium	107	112	P/P	80 - 120
2126664	Aluminum	118		P	80 - 120
2126664	Antimony	109		P	80 - 120
2126664	Arsenic	109		P	80 - 120
2126664	Boron	104		P	80 - 120
2126664	Cadmium	108		P	80 - 120
2126664	Chromium	105		P	80 - 120
2126664	Copper	103		P	80 - 120
2126664	Lead	105		P	80 - 120
2126664	Nickel	106		P	80 - 120
2126664	Selenium	101		P	80 - 120
2126664	Silver	107		P	80 - 120
2126664	Thallium	111		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126536	Chloride	97.2	98.0	P/P	90 - 110
2126644	Chloride	98.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126536	Sulfate	98.3	100	P/P	90 - 110
2126644	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126593	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126591	Kjeldahl Nitrogen	93.9	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372437

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126551	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126138	Total-P	96.8	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126281	Total-P	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126557	Total-P	94.4	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126554	O-Phosphate-P	98.0	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P372641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126934	Fluoride	96.3	95.7	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P372642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126771	Fluoride	94.5	93.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P372323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2126552	Organic Carbon	94.3	97.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P372218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126513	Turbidity	4.52	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P372277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126324	Barium	1.89	Spike	P	0 - 20
2126324	Calcium	0.827	Spike	P	0 - 20
2126324	Iron	0.597	Spike	P	0 - 20
2126324	Magnesium	0.789	Spike	P	0 - 20
2126324	Potassium	0.299	Spike	P	0 - 20
2126324	Sodium	0.287	Spike	P	0 - 20
2126324	Zinc	1.91	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P372277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126324	Aluminum	2.55	Spike	P	0 - 20
2126324	Antimony	2.88	Spike	P	0 - 20
2126324	Arsenic	1.84	Spike	P	0 - 20
2126324	Boron	1.72	Spike	P	0 - 20
2126324	Cadmium	1.21	Spike	P	0 - 20
2126324	Chromium	1.58	Spike	P	0 - 20
2126324	Copper	1.26	Spike	P	0 - 20
2126324	Lead	3.37	Spike	P	0 - 20
2126324	Nickel	0.412	Spike	P	0 - 20
2126324	Selenium	0.477	Spike	P	0 - 20
2126324	Silver	2.21	Spike	P	0 - 20
2126324	Thallium	4.56	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126536	Chloride	0.597	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126536	Sulfate	1.74	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126593	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P372339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126591	Kjeldahl Nitrogen	10.2	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126551	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126138	Total-P	3.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126281	Total-P	0.919	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P372388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126557	Total-P	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P372258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126554	O-Phosphate-P	1.22	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P372294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126549	Color (true)	2.69	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P372638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126934	Total Alkalinity	0.590	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P372639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126771	Total Alkalinity	0.605	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P372816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126446	TDS	3.09	Sample	P	0 - 10

Reference Method: SM 2540 C-97
 Batch ID: P372817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126673	TDS	2.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P372641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126934	Fluoride	0.480	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P372642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126771	Fluoride	0.958	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P372323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2126552	Organic Carbon	2.78	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94835

Included Lab Sample IDs: 2126549, 2126550, 2126555, 2126556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94852

Included Lab Sample IDs: 2126553, 2126554, 2126559, 2126560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.2	P/P	90 - 110
O-Phosphate-P	98.3	97.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94864

Included Lab Sample IDs: 2126549, 2126550, 2126555, 2126556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.4	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A94882

Included Lab Sample IDs: 2126551, 2126552, 2126557, 2126558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	101	P/P	90 - 110
Organic Carbon	96.0	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94889

Included Lab Sample IDs: 2126551, 2126552, 2126557, 2126558

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94914

Included Lab Sample IDs: 2126565, 2126566

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94931

Included Lab Sample IDs: 2126551, 2126552, 2126557, 2126558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94966

Included Lab Sample IDs: 2126551

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94989

Included Lab Sample IDs: 2126551, 2126552, 2126557, 2126558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	103	P/P	90 - 110
Ammonia-N	103	101	P/P	90 - 110
Ammonia-N	99.9	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95002

Included Lab Sample IDs: 2126557, 2126558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95003

Included Lab Sample IDs: 2126549, 2126550, 2126555, 2126556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	98.8	P/P	90 - 110
Sulfate	101	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95020

Included Lab Sample IDs: 2126552

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

Reference Method: SM 2320 B-97

Run ID: A95021

Included Lab Sample IDs: 2126549, 2126550, 2126555, 2126556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95021

Included Lab Sample IDs: 2126549, 2126550, 2126555, 2126556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110
Fluoride	98.6	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95119

Included Lab Sample IDs: 2126565, 2126566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	101	P/P	90 - 110
Antimony	102	103	P/P	90 - 110
Arsenic	105	106	P/P	90 - 110
Boron	99.5	101	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	99.1	99.3	P/P	90 - 110
Nickel	103	104	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Thallium	97.3	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A95161

Included Lab Sample IDs: 2126565, 2126566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	96.0	94.3	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						4.52	
EPA 200.7 Rev. 4.4	Barium	101	96.7	98.5	96.4			1.89
	Calcium	109	106	107	103			0.827
	Iron	104	100	101	103			0.597
	Magnesium	112	106	107	103			0.789
	Potassium	107	106	106	100			0.299
	Sodium	99.5	98.9	100				0.287
	Zinc	97.6	95.0	96.8	94.3			1.91
EPA 200.8 Rev. 5.4	Aluminum	105	103	106	118			2.55
	Antimony	106	106	109	109			2.88
	Arsenic	105	106	108	109			1.84
	Boron	104	104	106	104			1.72
	Cadmium	98.9	103	104	108			1.21
	Chromium	101	103	104	105			1.58
	Copper	102	103	105	103			1.26
	Lead	100	101	105	105			3.37
	Nickel	101	104	104	106			0.412
	Selenium	98.7	98.6	99.1	101			0.477
	Silver	104	104	107	107			2.21
	Thallium	106	107	112	111			4.56
EPA 300.0 Rev. 2.1	Chloride	100	97.2	98.0	98.4			0.597
	Sulfate	101	98.3	100	98.4			1.74
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	100	101				1.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	93.9	108				10.2
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	101				1.47
EPA 365.1 Rev. 2.0	Total-P	99.5	96.8	99.9				3.08
	Total-P	98.2	100	99.5				0.919
	Total-P	97.7	94.4	96.4				2.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	98.0	99.2				1.22
SM 2120 B	Color (true)	101					2.69	
SM 2320 B-97	Total Alkalinity	104					0.590	
	Total Alkalinity	105					0.605	
SM 2540 C-97	TDS						3.09	
	TDS						2.06	
SM 4500 F-C-97	Fluoride	96.5	96.3	95.7				0.480
	Fluoride	96.1	94.5	93.4				0.958
SM 5310 B-00	Organic Carbon	93.6	94.3	97.9				2.78

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2126549, 2126550, 2126555, 2126556
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2126565, 2126566
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2126565, 2126566
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2126549, 2126550, 2126555, 2126556
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2126549, 2126550, 2126555, 2126556
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2126551, 2126552, 2126557, 2126558

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2126551, 2126552, 2126557, 2126558
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2126551, 2126552, 2126557, 2126558
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2126551, 2126552, 2126557, 2126558
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2126553, 2126554, 2126559, 2126560
SM 2120 B / E31780	True Color measured at 450 nm	2126549, 2126550, 2126555, 2126556
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2126549, 2126550, 2126555, 2126556
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2126549, 2126550, 2126555, 2126556
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2126549, 2126550, 2126555, 2126556
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2126549, 2126550, 2126555, 2126556
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2126551, 2126552, 2126557, 2126558

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	10/09/2019			10/09/2019 15:36	Rosalyn Ballman	2126549, 2126550, 2126555, 2126556
EPA 200.7 Rev. 4.4	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/11/2019 15:42	Betina Topolski	2126565
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/11/2019 15:48	Betina Topolski	2126566
EPA 200.8 Rev. 5.4	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/21/2019 20:26	Justin Cutchin	2126565
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/21/2019 20:36	Justin Cutchin	2126566
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/22/2019 20:16	Justin Cutchin	2126565
	10/09/2019	10/10/2019 17:30	Elliott D. Healy	10/22/2019 20:24	Justin Cutchin	2126566
EPA 300.0 Rev. 2.1	10/09/2019			10/16/2019 21:02	Jhamieka S. Greenwood	2126549
	10/09/2019			10/16/2019 21:14	Jhamieka S. Greenwood	2126550
	10/09/2019			10/16/2019 21:26	Jhamieka S. Greenwood	2126555
	10/09/2019			10/16/2019 21:38	Jhamieka S. Greenwood	2126556
EPA 350.1 Rev. 2.0	10/09/2019			10/15/2019 13:38	Ping Hua	2126552
	10/09/2019			10/15/2019 13:45	Ping Hua	2126557
	10/09/2019			10/15/2019 13:47	Ping Hua	2126558
	10/09/2019			10/15/2019 14:51	Ping Hua	2126551
EPA 351.2 Rev. 2.0	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 16:00	Jhamieka S. Greenwood	2126551
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 16:01	Jhamieka S. Greenwood	2126552
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 16:03	Jhamieka S. Greenwood	2126557
	10/09/2019	10/11/2019 10:11	Sima Feizi	10/14/2019 16:05	Jhamieka S. Greenwood	2126558
EPA 353.2 Rev. 2.0	10/09/2019			10/11/2019 10:38	Beverly Y. Sanders	2126551
	10/09/2019			10/11/2019 10:45	Beverly Y. Sanders	2126552
	10/09/2019			10/11/2019 10:46	Beverly Y. Sanders	2126557
	10/09/2019			10/11/2019 10:48	Beverly Y. Sanders	2126558
EPA 365.1 Rev. 2.0	10/09/2019	10/10/2019 14:40	Lipi Saha	10/14/2019 16:15	Rosalyn Ballman	2126551
	10/09/2019	10/10/2019 14:40	Lipi Saha	10/16/2019 13:13	Rosalyn Ballman	2126552
	10/09/2019	10/14/2019 14:50	Lipi Saha	10/15/2019 15:45	Rosalyn Ballman	2126557
	10/09/2019	10/14/2019 14:50	Lipi Saha	10/15/2019 15:46	Rosalyn Ballman	2126558
EPA 365.1 Rev. 2.0 dissolved	10/09/2019			10/09/2019 16:52	Julia Storbeck	2126554
	10/09/2019			10/09/2019 17:30	Julia Storbeck	2126553
	10/09/2019			10/09/2019 17:31	Julia Storbeck	2126559
	10/09/2019			10/09/2019 17:32	Julia Storbeck	2126560
SM 2120 B	10/09/2019			10/09/2019 17:35	Madeline Funaro	2126549, 2126550
	10/09/2019			10/09/2019 17:36	Madeline Funaro	2126555
	10/09/2019			10/09/2019 17:37	Madeline Funaro	2126556
SM 2320 B-97	10/09/2019			10/15/2019 03:39	Dale L. Simmons	2126549
	10/09/2019			10/15/2019 03:50	Dale L. Simmons	2126550
	10/09/2019			10/15/2019 07:22	Dale L. Simmons	2126555
	10/09/2019			10/15/2019 07:35	Dale L. Simmons	2126556
SM 2540 C-97	10/09/2019			10/11/2019 12:48	Yijie Li	2126549, 2126550, 2126555, 2126556
SM 2540 D-97	10/09/2019			10/11/2019 12:48	Yijie Li	2126549, 2126550, 2126555, 2126556

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	10/09/2019			10/15/2019 03:39	Dale L. Simmons	2126549
	10/09/2019			10/15/2019 03:50	Dale L. Simmons	2126550
	10/09/2019			10/15/2019 07:22	Dale L. Simmons	2126555
	10/09/2019			10/15/2019 07:35	Dale L. Simmons	2126556
SM 5310 B-00	10/09/2019			10/10/2019 21:55	Madeline Funaro	2126552
	10/09/2019			10/11/2019 02:25	Madeline Funaro	2126551
	10/09/2019			10/11/2019 02:39	Madeline Funaro	2126557
	10/09/2019			10/11/2019 02:53	Madeline Funaro	2126558