Chemical Analysis Report

NE-DIST-2018-04-17-01

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

Event Description: **LSJR SW**
Request ID: **RQ-2018-04-09-31**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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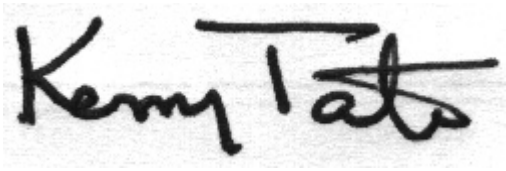
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 23-MAY-2018 13:28



NON-CONFORMANCE REPORT INCLUDED

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 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 Black Creek @ Tuscarora **Collection Date/Time: 04/16/2018 14:20**

Field ID: G2NE1158 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985022	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P343610	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P343704	
		Sulfate	6.3		mg SO4/L	P343706	
	SM 2120 B	Color (true)	170		PCU	P343585	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	95		mg/L	P344110	
	SM 2540 D-97	TSS	3	I	mg/L	P344054	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P344073	
1985025	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P343777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P343723	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P343747	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P343828	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P343983	
1985028	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P343581	

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: Peters Creek @ SR 16 **Collection Date/Time: 04/16/2018 09:55**

Field ID: 20030403 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985031	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P343610	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P343705	
		Sulfate	4.4		mg SO4/L	P343707	
	SM 2120 B	Color (true)	180		PCU	P343585	
	SM 2320 B-97	Total Alkalinity	4.9		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	74		mg/L	P344110	
	SM 2540 D-97	TSS	3	I	mg/L	P344054	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P344073	
1985033	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P343777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P343723	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343747	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P343828	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P343983	
1985035	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P343581	
1985048	EPA 200.7 Rev. 4.4	Calcium	4.47		mg/L	P343702	
		Iron	430		ug/L	P343702	
		Magnesium	0.86		mg/L	P343702	
		Potassium	0.30	U	mg/L	P343702	
		Sodium	5.7		mg/L	P343702	
		Zinc	5.0	U	ug/L	P343702	
	EPA 200.8 Rev. 5.4	Arsenic	0.22		ug/L	P343702	
		Cadmium	0.031	I	ug/L	P343702	
		Chromium	0.40	U	ug/L	P343702	

Field ID: 20030403 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985048	EPA 200.8 Rev. 5.4	Copper	0.20	U	ug/L	P343702	
		Lead	0.23		ug/L	P343702	
		Nickel	0.27	I	ug/L	P343702	
		Silver	0.010	U	ug/L	P343702	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Peters Creek Culvert SR 315 **Collection Date/Time: 04/16/2018 10:30**

Field ID: 20030388 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985032	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P343610	
	EPA 300.0 Rev. 2.1	Chloride	11	A	mg Cl/L	P343705	
		Sulfate	3.2	A	mg SO4/L	P343707	
	SM 2120 B	Color (true)	200		PCU	P343585	
	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	73		mg/L	P344111	
	SM 2540 D-97	TSS	2	I	mg/L	P344055	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P344073	
1985034	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P343777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P343723	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343747	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P343828	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P343983	
1985036	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P343581	
1985049	EPA 200.7 Rev. 4.4	Calcium	3.46		mg/L	P343702	
		Iron	610		ug/L	P343702	
		Magnesium	0.80		mg/L	P343702	
		Potassium	0.30	U	mg/L	P343702	
		Sodium	6.9		mg/L	P343702	
		Zinc	5.0	U	ug/L	P343702	
	EPA 200.8 Rev. 5.4	Arsenic	0.30		ug/L	P343702	
		Cadmium	0.020	U	ug/L	P343702	
		Chromium	0.63	I	ug/L	P343702	
		Copper	0.20	U	ug/L	P343702	
		Lead	0.27		ug/L	P343702	
		Nickel	0.41	I	ug/L	P343702	
		Silver	0.010	U	ug/L	P343702	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Unnamed Branch @ Brit Place **Collection Date/Time: 04/16/2018 11:30**

Field ID: G2NE1140 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985023	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P343610	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P343704	
		Sulfate	9.0		mg SO4/L	P343706	
	SM 2120 B	Color (true)	250		PCU	P343585	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	64		mg/L	P344110	
	SM 2540 D-97	TSS	2	I	mg/L	P344054	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P344073	
1985026	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P343777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P343723	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P343747	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P343828	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P343983	
1985029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P343581	

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: Grog Br @ Long Bay Rd **Collection Date/Time: 04/16/2018 13:30**

Field ID: 20030833 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985024	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P343610	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P343704	
		Sulfate	3.6		mg SO4/L	P343706	
	SM 2120 B	Color (true)	220		PCU	P343585	
	SM 2320 B-97	Total Alkalinity	9.8		mg CaCO3/L	P344071	
	SM 2540 C-97	TDS	96		mg/L	P344110	
	SM 2540 D-97	TSS	2	I	mg/L	P344054	
	SM 4500 F-C-97	Fluoride	0.039	I	mg F/L	P344073	
1985027	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P343777	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P343723	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P343747	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P343828	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P343983	
1985030	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P343581	

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

Non-Conformance Report

NCR ID: 6997

Event(s)	Job(s)	Sample(s)	Test(s)
NE-DIST-2018-04-17-01	TLH-2018-04-17-73	1985040	

NCR Type: ANALYSIS **NCR Category: Analytical Measurement**

Observation: Due to a complication during the CHLSUITE-W analysis, some sample was lost.

Non-Conformance Report

NCR ID: 6997

Event(s)	Job(s)	Sample(s)	Test(s)

Resolution: The data will be reported with a J qualifier. The customer, Jeremy Parrish, was contacted.

Authorized by/Date: Kerry Tate, Ph.D. 5/23/2018

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343610

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343702

Component	Result	Code	Units
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: P343702

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343704

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343706

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343777

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343723

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343747

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343828

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343581

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

Reference Method: SM 2120 B
Batch ID: P343585

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344071

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: P344110

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P344111

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344054

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P344055

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343983

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: P343702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	101		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343702

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	99.2		P	85 - 115
Chromium	94.1		P	85 - 115
Copper	99.2		P	85 - 115
Lead	95.1		P	85 - 115
Nickel	105		P	85 - 115
Silver	95.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343706

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343777

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343723

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343747

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343828

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: P343581

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

Reference Method: SM 2320 B-97
Batch ID: P344071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984901	Iron	99.4	101	P/P	80 - 120
1984901	Magnesium	103		P	80 - 120
1984901	Sodium	99.6		P	80 - 120
1984901	Zinc	94.2	97.0	P/P	80 - 120
1985012	Calcium	102		P	80 - 120
1985012	Iron	97.5		P	80 - 120
1985012	Magnesium	103		P	80 - 120
1985012	Potassium	91.4		P	80 - 120
1985012	Sodium	99.8		P	80 - 120
1985012	Zinc	97.2		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984901	Arsenic	104	104	P/P	80 - 120
1984901	Cadmium	101	100	P/P	80 - 120
1984901	Chromium	90.8	89.4	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984901	Copper	93.6	94.8	P/P	80 - 120
1984901	Lead	96.1	95.7	P/P	80 - 120
1984901	Nickel	96.4	94.8	P/P	80 - 120
1984901	Silver	95.8	93.1	P/P	80 - 120
1985012	Arsenic	106		P	80 - 120
1985012	Cadmium	102		P	80 - 120
1985012	Chromium	91.5		P	80 - 120
1985012	Copper	95.3		P	80 - 120
1985012	Lead	97.2		P	80 - 120
1985012	Nickel	96.9		P	80 - 120
1985012	Silver	93.9		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984758	Chloride	96.7		P	90 - 110
1985022	Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985032	Chloride	98.0		P	90 - 110
1985083	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984758	Sulfate	94.3		P	90 - 110
1985022	Sulfate	94.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985032	Sulfate	92.8		P	90 - 110
1985083	Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985025	Ammonia-N	98.4	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985060	Kjeldahl Nitrogen	95.4	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343747

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985025	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343828

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984988	Total-P	97.3	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985028	O-Phosphate-P	99.2	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1984926	Fluoride	94.9	96.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985006	Organic Carbon	94.9	99.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984987	Turbidity	4.96	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984901	Calcium	2.31	Spike	P	0 - 20
1984901	Iron	1.50	Spike	P	0 - 20
1984901	Magnesium	2.86	Spike	P	0 - 20
1984901	Potassium	1.53	Spike	P	0 - 20
1984901	Sodium	1.85	Spike	P	0 - 20
1984901	Zinc	2.85	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984901	Arsenic	0.319	Spike	P	0 - 20
1984901	Cadmium	0.657	Spike	P	0 - 20
1984901	Chromium	1.56	Spike	P	0 - 20
1984901	Copper	1.22	Spike	P	0 - 20
1984901	Lead	0.427	Spike	P	0 - 20
1984901	Nickel	1.58	Spike	P	0 - 20
1984901	Silver	2.93	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984758	Chloride	0.207	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985032	Chloride	0.246	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984758	Sulfate	1.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985032	Sulfate	0.742	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985025	Ammonia-N	0.875	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985060	Kjeldahl Nitrogen	3.48	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343747

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985025	NO2NO3-N	0.438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343828

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984988	Total-P	5.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985028	O-Phosphate-P	0.442	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P343585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985004	Color (true)	0.0876	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P344071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984926	Total Alkalinity	0.0685	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P344110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985058	TDS	4.71	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P344111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985059	TDS	3.83	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P344073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1984926	Fluoride	0.986	Spike	P	0 - 3.5

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P343983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985006	Organic Carbon	2.75	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83267
Included Lab Sample IDs: 1985022, 1985023, 1985024, 1985031, 1985032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	98.6	P/P	90 - 110
Chloride	97.6	98.5	P/P	90 - 110
Chloride	98.5	100	P/P	90 - 110
Chloride	98.6	97.6	P/P	90 - 110
Sulfate	101	98.7	P/P	90 - 110
Sulfate	97.2	98.8	P/P	90 - 110
Sulfate	98.7	97.2	P/P	90 - 110
Sulfate	98.8	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83289
Included Lab Sample IDs: 1985028, 1985029, 1985030, 1985035, 1985036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.1	P/P	90 - 110
O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83291
Included Lab Sample IDs: 1985022, 1985023, 1985024, 1985031, 1985032

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83304
Included Lab Sample IDs: 1985022, 1985023, 1985024, 1985031, 1985032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83348
Included Lab Sample IDs: 1985025, 1985026, 1985027, 1985033, 1985034

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83354
Included Lab Sample IDs: 1985025, 1985026, 1985027, 1985033, 1985034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.5	P/P	90 - 110
Ammonia-N	99.5	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83362
Included Lab Sample IDs: 1985025, 1985026, 1985027, 1985033, 1985034

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A83387
Included Lab Sample IDs: 1985048, 1985049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	103	101	P/P	90 - 110
Potassium	99.6	98.9	P/P	90 - 110
Sodium	99.9	99.3	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83396
Included Lab Sample IDs: 1985026

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A83408
Included Lab Sample IDs: 1985048, 1985049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.7	99.4	P/P	90 - 110
Cadmium	99.2	98.8	P/P	90 - 110
Chromium	93.4	92.4	P/P	90 - 110
Lead	97.1	98.0	P/P	90 - 110
Nickel	97.4	96.9	P/P	90 - 110
Silver	95.6	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83416
Included Lab Sample IDs: 1985025, 1985027, 1985033, 1985034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A83431
Included Lab Sample IDs: 1985025, 1985026, 1985027, 1985033, 1985034

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

Reference Method: SM 2320 B-97
Run ID: A83462
Included Lab Sample IDs: 1985022, 1985023, 1985024, 1985031, 1985032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	98.2	P/P	90 - 110
Total Alkalinity	98.2	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83462
Included Lab Sample IDs: 1985022, 1985023, 1985024, 1985031, 1985032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.6	P/P	90 - 110
Fluoride	98.6	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A83480
Included Lab Sample IDs: 1985048, 1985049

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	100	97.7	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						4.96	
EPA 200.7 Rev. 4.4	Calcium	105	102					2.31
	Iron	101	99.4	101	97.5			1.50
	Magnesium	105	103	103				2.86
	Potassium	101	91.4					1.53
	Sodium	101	99.6	99.8				1.85
	Zinc	102	94.2	97.0	97.2			2.85
EPA 200.8 Rev. 5.4	Arsenic	104	104	104	106			0.319
	Cadmium	99.2	101	100	102			0.657
	Chromium	94.1	90.8	89.4	91.5			1.56
	Copper	99.2	93.6	94.8	95.3			1.22
	Lead	95.1	96.1	95.7	97.2			0.427
	Nickel	105	96.4	94.8	96.9			1.58
	Silver	95.2	95.8	93.1	93.9			2.93
EPA 300.0 Rev. 2.1	Chloride	95.3	96.7	93.7			0.207	
	Chloride	93.9	98.0	98.2			0.246	

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 300.0 Rev. 2.1	Sulfate	95.6	94.3	94.0		1.19	
	Sulfate	95.7	92.8	96.3		0.742	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	98.4	99.5			0.875
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	95.4	101			3.48
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101			0.438
EPA 365.1 Rev. 2.0	Total-P	105	97.3	103			5.71
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	99.2	98.7			0.442
SM 2120 B	Color (true)					0.0876	
SM 2320 B-97	Total Alkalinity	102				0.0685	
SM 2540 C-97	TDS					4.71	
	TDS					3.83	
SM 4500 F-C-97	Fluoride	95.8	94.9	96.6			0.986
SM 5310 B-00	Organic Carbon	99.1	94.9	99.4			2.75

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1985022, 1985023, 1985024, 1985031, 1985032
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1985048, 1985049
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1985048, 1985049
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1985022, 1985023, 1985024, 1985031, 1985032
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1985022, 1985023, 1985024, 1985031, 1985032
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1985025, 1985026, 1985027, 1985033, 1985034
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1985025, 1985026, 1985027, 1985033, 1985034
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1985025, 1985026, 1985027, 1985033, 1985034
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1985025, 1985026, 1985027, 1985033, 1985034
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1985028, 1985029, 1985030, 1985035, 1985036
SM 2120 B / E31780	True Color measured at 450 nm	1985022, 1985023, 1985024, 1985031, 1985032
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1985022, 1985023, 1985024, 1985031, 1985032
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1985022, 1985023, 1985024, 1985031, 1985032
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1985022, 1985023, 1985024, 1985031, 1985032
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1985022, 1985023, 1985024, 1985031, 1985032
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1985025, 1985026, 1985027, 1985033, 1985034

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	04/17/2018			04/17/2018 17:41	William L. Brown IV	1985022, 1985023, 1985024, 1985031, 1985032
EPA 200.7 Rev. 4.4	04/17/2018	04/19/2018 11:01	Allison Taylor	04/20/2018 14:46	Betina Topolski	1985048
	04/17/2018	04/19/2018 11:01	Allison Taylor	04/20/2018 14:53	Betina Topolski	1985049
EPA 200.8 Rev. 5.4	04/17/2018	04/19/2018 11:01	Allison Taylor	04/23/2018 20:56	Robert K Palmer	1985048
	04/17/2018	04/19/2018 11:01	Allison Taylor	04/23/2018 21:06	Robert K Palmer	1985049
	04/17/2018	04/19/2018 11:01	Allison Taylor	04/26/2018 13:12	Robert K Palmer	1985048
	04/17/2018	04/19/2018 11:01	Allison Taylor	04/26/2018 13:17	Robert K Palmer	1985049
EPA 300.0 Rev. 2.1	04/17/2018			04/18/2018 15:00	Lipi Saha	1985022
	04/17/2018			04/18/2018 18:23	Lipi Saha	1985023
	04/17/2018			04/18/2018 18:59	Lipi Saha	1985024
	04/17/2018			04/18/2018 20:47	Lipi Saha	1985032
	04/17/2018			04/18/2018 21:35	Lipi Saha	1985031
EPA 350.1 Rev. 2.0	04/17/2018			04/18/2018 13:23	Ping Hua	1985025
	04/17/2018			04/18/2018 13:33	Ping Hua	1985026
	04/17/2018			04/18/2018 13:35	Ping Hua	1985027
	04/17/2018			04/18/2018 13:36	Ping Hua	1985033
	04/17/2018			04/18/2018 13:38	Ping Hua	1985034
EPA 351.2 Rev. 2.0	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 09:54	Joseph Suarez	1985025
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 09:58	Joseph Suarez	1985026
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 10:00	Joseph Suarez	1985027
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 10:01	Joseph Suarez	1985033
	04/17/2018	04/19/2018 11:30	Adrian Shelby	04/20/2018 10:03	Joseph Suarez	1985034
EPA 353.2 Rev. 2.0	04/17/2018			04/19/2018 12:05	Lauren Bottorf	1985025
	04/17/2018			04/19/2018 12:11	Lauren Bottorf	1985026
	04/17/2018			04/19/2018 12:12	Lauren Bottorf	1985027
	04/17/2018			04/19/2018 12:14	Lauren Bottorf	1985033
	04/17/2018			04/19/2018 12:15	Lauren Bottorf	1985034
EPA 365.1 Rev. 2.0	04/17/2018	04/20/2018 12:57	Sima Feizi	04/23/2018 10:24	Beverly Y. Sanders	1985026
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:14	Beverly Y. Sanders	1985025
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:15	Beverly Y. Sanders	1985027
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:16	Beverly Y. Sanders	1985033
	04/17/2018	04/20/2018 12:57	Sima Feizi	04/24/2018 11:17	Beverly Y. Sanders	1985034
EPA 365.1 Rev. 2.0 dissolved	04/17/2018			04/17/2018 15:48	Megan Treadwell	1985028
	04/17/2018			04/17/2018 15:54	Megan Treadwell	1985029
	04/17/2018			04/17/2018 15:55	Megan Treadwell	1985030
	04/17/2018			04/17/2018 15:56	Megan Treadwell	1985035
	04/17/2018			04/17/2018 16:01	Megan Treadwell	1985036
SM 2120 B	04/17/2018			04/17/2018 16:44	Tanya Welborn	1985022
	04/17/2018			04/17/2018 16:45	Tanya Welborn	1985023, 1985024

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	04/17/2018			04/17/2018 16:46	Tanya Welborn	1985031
	04/17/2018			04/17/2018 16:47	Tanya Welborn	1985032
SM 2320 B-97	04/17/2018			04/25/2018 23:52	Dale L. Simmons	1985022
	04/17/2018			04/26/2018 00:01	Dale L. Simmons	1985023
	04/17/2018			04/26/2018 00:35	Dale L. Simmons	1985024
	04/17/2018			04/26/2018 00:45	Dale L. Simmons	1985031
	04/17/2018			04/26/2018 00:55	Dale L. Simmons	1985032
SM 2540 C-97	04/17/2018			04/21/2018 23:36	Yijie Li	1985022, 1985023, 1985024, 1985031, 1985032
SM 2540 D-97	04/17/2018			04/21/2018 23:06	Yijie Li	1985022, 1985023, 1985024, 1985031, 1985032
SM 4500 F-C-97	04/17/2018			04/25/2018 23:52	Dale L. Simmons	1985022
	04/17/2018			04/26/2018 00:01	Dale L. Simmons	1985023
	04/17/2018			04/26/2018 00:35	Dale L. Simmons	1985024
	04/17/2018			04/26/2018 00:45	Dale L. Simmons	1985031
	04/17/2018			04/26/2018 00:55	Dale L. Simmons	1985032
SM 5310 B-00	04/17/2018			04/23/2018 17:11	Megan Treadwell	1985025
	04/17/2018			04/23/2018 17:25	Megan Treadwell	1985026
	04/17/2018			04/23/2018 17:37	Megan Treadwell	1985027
	04/17/2018			04/23/2018 17:49	Megan Treadwell	1985033
	04/17/2018			04/23/2018 18:06	Megan Treadwell	1985034