

Chemical Analysis Report

NW-DIST-2021-07-02-01

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

Event Description: **Perdido Bayou Run**
Request ID: **RQ-2021-06-28-22**
Customer: **NW-DIST**
Project ID: **SMP**

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Date Certified: 26-JUL-2021 12:07



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 group are included in this report: 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: Weekly Bayou Creek @ County Rd 293

Collection Date/Time: 07/01/2021 11:35

Field ID: G5NW0163

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259491	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400783	
	SM 2540 D-2011	TSS	2	UA	mg/L	P400980	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400787	
2259498	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P400946	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P400684	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P400563	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P400577	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P400823	
2259505	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400537	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: FB 07012021

Collection Date/Time: 07/01/2021 11:45

Field ID: FB 07012021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259512	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400783	
	SM 2540 D-2011	TSS	2	U	mg/L	P400980	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400787	
2259513	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P400946	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P400642	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400563	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P400658	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P400823	
2259514	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400537	

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: Weekly Bayou Middle Portion

Collection Date/Time: 07/01/2021 12:35

Field ID: G5NW0157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259492	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P400783	
	SM 2540 D-2011	TSS	3	IA	mg/L	P400981	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P400787	
2259499	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P401093	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P400639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P400624	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P400578	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P400728	
2259506	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400535	

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: Bridge Creek near Bridge Creek Landing

Collection Date/Time: 07/01/2021 14:07

Field ID: G5NW0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259493	EPA 180.1 Rev. 2.0	Turbidity	3.4	A	NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	5.4		mg CaCO3/L	P400783	
	SM 2540 D-2011	TSS	6	I	mg/L	P400979	
	SM 4500 F-C-2011	Fluoride	0.037	I	mg F/L	P400787	
2259500	EPA 350.1 Rev. 2.0	Ammonia-N	0.30		mg N/L	P401094	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P400642	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P400563	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P400658	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P400823	
2259507	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P400537	

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: Bayou Garcon

Collection Date/Time: 07/01/2021 13:05

Field ID: G5NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259494	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P400925	
	SM 2540 D-2011	TSS	4	I	mg/L	P400979	
	SM 4500 F-C-2011	Fluoride	0.35		mg F/L	P400928	
2259501	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P400873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P400639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P400624	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P400578	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P400823	
2259508	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400535	

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: Bayou Grande at CR-297

Collection Date/Time: 07/01/2021 10:20

Field ID: G4NW0521

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259495	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	6.4		mg CaCO3/L	P400783	
	SM 2540 D-2011	TSS	5	I	mg/L	P400980	
	SM 4500 F-C-2011	Fluoride	0.051	I	mg F/L	P400787	
2259502	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P400946	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P400642	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P400563	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P400579	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P400823	
2259509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400537	

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: Bayou Grande near Navy Point Boat Ramp

Collection Date/Time: 07/01/2021 09:30

Field ID: G4NW0501

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259496	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	52	A	mg CaCO3/L	P400925	
	SM 2540 D-2011	TSS	3	U	mg/L	P400981	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P400928	
2259503	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P400873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P400639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400624	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P400578	
	SM 5310 B-2011	Organic Carbon	5.9		mg C/L	P400728	
2259510	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400535	

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: Bayou Grande

Collection Date/Time: 07/01/2021 09:45

Field ID: G4NW0500

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2259497	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P400600	
	SM 2320 B-2011	Total Alkalinity	49		mg CaCO3/L	P400925	
	SM 2540 D-2011	TSS	6	I	mg/L	P400981	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P400928	
2259504	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P400873	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P400639	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P400624	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P400578	
	SM 5310 B-2011	Organic Carbon	5.2		mg C/L	P400728	
2259511	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400535	

Ref. Method and Comment:

SM 2540 D-2011: 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: P400600

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400946

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401093

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401094

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400639

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400642

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400684

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400563

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400624

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400577

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400578

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400579

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400658

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400537

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

Reference Method: SM 2320 B-2011
Batch ID: P400783

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

Reference Method: SM 2320 B-2011
Batch ID: P400925

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P400979

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400980

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400981

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400787

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400928

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P400728

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

Reference Method: SM 5310 B-2011
Batch ID: P400823

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400946

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401093

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401094

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400639

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400642

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400684

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400624

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400577

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400578

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400579

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: P400658

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400537

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

Reference Method: SM 2320 B-2011
Batch ID: P400783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P400925

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P400787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P400928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.7		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P400823

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257750	Ammonia-N	98.4	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259577	Ammonia-N	93.8	94.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259668	Ammonia-N	96.8	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260228	Ammonia-N	97.4	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258622	Kjeldahl Nitrogen	93.6	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259577	Kjeldahl Nitrogen	101	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2260227	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259581	NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400624

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259499	NO2NO3-N	96.7	97.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259660	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400579

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259582	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259500	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259554	O-Phosphate-P	98.2	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259583	O-Phosphate-P	96.3	98.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P400787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259970	Fluoride	101	100	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P400928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259496	Fluoride	99.4	100	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P400728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259670	Organic Carbon	95.3	96.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P400823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258555	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259493	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257750	Ammonia-N	0.751	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259577	Ammonia-N	0.339	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259668	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260228	Ammonia-N	0.611	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258622	Kjeldahl Nitrogen	4.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259577	Kjeldahl Nitrogen	4.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2260227	Kjeldahl Nitrogen	0.483	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P400563

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259581	NO2NO3-N	0.306	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P400624

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259499	NO2NO3-N	0.438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400577

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258642	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400578

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259660	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400579

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259582	Total-P	0.368	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400658

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259500	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400535

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259554	O-Phosphate-P	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400537

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259583	O-Phosphate-P	1.09	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P400783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259970	Total Alkalinity	0.392	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P400925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259496	Total Alkalinity	0.537	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P400787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259970	Fluoride	0.467	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P400928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259496	Fluoride	0.502	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P400728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259670	Organic Carbon	0.708	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P400823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258555	Organic Carbon	0.558	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106433

Included Lab Sample IDs: 2259505, 2259506, 2259507, 2259508, 2259509, 2259510, 2259511, 2259514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.6	P/P	90 - 110
O-Phosphate-P	97.7	99.1	P/P	90 - 110
O-Phosphate-P	98.6	97.7	P/P	90 - 110
O-Phosphate-P	99.1	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106453

Included Lab Sample IDs: 2259498, 2259500, 2259502, 2259513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106472

Included Lab Sample IDs: 2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106480

Included Lab Sample IDs: 2259499, 2259501, 2259503, 2259504

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106482

Included Lab Sample IDs: 2259498, 2259499, 2259501, 2259503, 2259504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.8	P/P	90 - 110
Total-P	98.2	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106483

Included Lab Sample IDs: 2259502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106503

Included Lab Sample IDs: 2259500

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106518

Included Lab Sample IDs: 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	103	P/P	90 - 110
Kjeldahl Nitrogen	99.7	97.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106526

Included Lab Sample IDs: 2259499, 2259503, 2259504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106539

Included Lab Sample IDs: 2259498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	92.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106546

Included Lab Sample IDs: 2259491, 2259492, 2259493, 2259495, 2259512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	102	P/P	90 - 110
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106546

Included Lab Sample IDs: 2259491, 2259492, 2259493, 2259495, 2259512

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106557

Included Lab Sample IDs: 2259513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106565

Included Lab Sample IDs: 2259498, 2259500, 2259501, 2259502, 2259513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.2	99.8	P/P	90 - 110
Organic Carbon	99.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106584

Included Lab Sample IDs: 2259501, 2259503, 2259504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106605

Included Lab Sample IDs: 2259494, 2259496, 2259497

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

Reference Method: SM 4500 F-C-2011

Run ID: A106605

Included Lab Sample IDs: 2259494, 2259496, 2259497

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106612

Included Lab Sample IDs: 2259498, 2259502, 2259513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.5	P/P	90 - 110
Ammonia-N	99.5	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106666

Included Lab Sample IDs: 2259499, 2259500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.6	97.4	P/P	90 - 110
Ammonia-N	98.5	96.6	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.0	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	98.4	97.4			0.751
	Ammonia-N	99.8	93.8	94.2			0.339
	Ammonia-N	98.4	96.8	95.6			1.05
	Ammonia-N	98.0	97.4	96.6			0.611
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.6	93.6	98.1			4.20
	Kjeldahl Nitrogen	104	101	107			4.19
	Kjeldahl Nitrogen	102	103	104			0.483
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.0	97.5			0.306
	NO2NO3-N	98.5	96.7	97.2			0.438
EPA 365.1 Rev. 2.0	Total-P	103					1.04
	Total-P	99.8	103	101			1.66
	Total-P	104	107	107			0.368
	Total-P	103	104	106			1.81
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	98.2	98.8			0.487
	O-Phosphate-P	102	96.3	98.1			1.09
SM 2320 B-2011	Total Alkalinity	102				0.392	
	Total Alkalinity	104				0.537	
SM 4500 F-C-2011	Fluoride	101	101	100			0.467
	Fluoride	99.7	99.4	100			0.502
SM 5310 B-2011	Organic Carbon	95.8	95.3	96.2			0.708
	Organic Carbon	99.4	101	102			0.558

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2259498, 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2259498, 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2259498, 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2259498, 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2259505, 2259506, 2259507, 2259508, 2259509, 2259510, 2259511, 2259514
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2259498, 2259499, 2259500, 2259501, 2259502, 2259503, 2259504, 2259513

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	07/02/2021			07/02/2021 15:25	Blanca Fach	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
EPA 350.1 Rev. 2.0	07/02/2021			07/13/2021 13:02	Roberta Tatti	2259501
	07/02/2021			07/13/2021 13:03	Roberta Tatti	2259503
	07/02/2021			07/13/2021 13:04	Roberta Tatti	2259504
	07/02/2021			07/14/2021 12:35	Roberta Tatti	2259498
	07/02/2021			07/14/2021 12:42	Roberta Tatti	2259513
	07/02/2021			07/14/2021 13:51	Roberta Tatti	2259502
	07/02/2021			07/16/2021 14:18	Roberta Tatti	2259499
	07/02/2021			07/16/2021 14:45	Roberta Tatti	2259500
EPA 351.2 Rev. 2.0	07/02/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 16:28	Letuzia M De Oliveira	2259499
	07/02/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 16:29	Letuzia M De Oliveira	2259501
	07/02/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 16:31	Letuzia M De Oliveira	2259503
	07/02/2021	07/07/2021 13:14	Benjamin T. Nordmann	07/08/2021 16:33	Letuzia M De Oliveira	2259504
	07/02/2021	07/07/2021 13:18	Benjamin T. Nordmann	07/08/2021 16:51	Letuzia M De Oliveira	2259500
	07/02/2021	07/07/2021 13:18	Benjamin T. Nordmann	07/08/2021 16:52	Letuzia M De Oliveira	2259502
	07/02/2021	07/07/2021 13:18	Benjamin T. Nordmann	07/08/2021 16:54	Letuzia M De Oliveira	2259513
	07/02/2021	07/08/2021 15:33	Madeline Gruver	07/09/2021 14:44	Letuzia M De Oliveira	2259498
EPA 353.2 Rev. 2.0	07/02/2021			07/06/2021 09:20	Beverly Y. Sanders	2259498
	07/02/2021			07/06/2021 09:21	Beverly Y. Sanders	2259500
	07/02/2021			07/06/2021 09:22	Beverly Y. Sanders	2259502
	07/02/2021			07/06/2021 09:23	Beverly Y. Sanders	2259513
	07/02/2021			07/07/2021 10:44	Beverly Y. Sanders	2259499
	07/02/2021			07/07/2021 10:50	Beverly Y. Sanders	2259501
	07/02/2021			07/07/2021 10:51	Beverly Y. Sanders	2259503
	07/02/2021			07/07/2021 10:52	Beverly Y. Sanders	2259504
EPA 365.1 Rev. 2.0	07/02/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 13:09	Shengyu Ding	2259498
	07/02/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 13:18	Shengyu Ding	2259499
	07/02/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 13:19	Shengyu Ding	2259501, 2259503
	07/02/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 13:20	Shengyu Ding	2259504
	07/02/2021	07/06/2021 15:49	Madeline Gruver	07/07/2021 14:17	Shengyu Ding	2259502
	07/02/2021	07/08/2021 08:43	Shengyu Ding	07/08/2021 11:57	Shengyu Ding	2259500
	07/02/2021	07/08/2021 08:43	Shengyu Ding	07/09/2021 15:10	Shengyu Ding	2259513
EPA 365.1 Rev. 2.0 dissolved	07/02/2021			07/02/2021 14:48	Ping Hua	2259506
	07/02/2021			07/02/2021 14:49	Ping Hua	2259508
	07/02/2021			07/02/2021 14:54	Ping Hua	2259510
	07/02/2021			07/02/2021 14:55	Ping Hua	2259511
	07/02/2021			07/02/2021 15:13	Ping Hua	2259505
	07/02/2021			07/02/2021 15:14	Ping Hua	2259507
	07/02/2021			07/02/2021 15:15	Ping Hua	2259509

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved SM 2320 B-2011	07/02/2021			07/02/2021 15:22	Ping Hua	2259514
	07/02/2021			07/10/2021 12:11	Dale L. Simmons	2259491
	07/02/2021			07/10/2021 12:21	Dale L. Simmons	2259493
	07/02/2021			07/10/2021 12:32	Dale L. Simmons	2259495
	07/02/2021			07/10/2021 12:40	Dale L. Simmons	2259512
	07/02/2021			07/10/2021 16:00	Dale L. Simmons	2259492
	07/02/2021			07/13/2021 20:58	Dale L. Simmons	2259496
	07/02/2021			07/13/2021 21:12	Dale L. Simmons	2259494
	07/02/2021			07/13/2021 21:26	Dale L. Simmons	2259497
SM 2540 D-2011	07/02/2021			07/07/2021 14:08	Yijie Li	2259491, 2259492, 2259493, 2259494, 2259495, 2259496, 2259497, 2259512
SM 4500 F-C-2011	07/02/2021			07/10/2021 12:11	Dale L. Simmons	2259491
	07/02/2021			07/10/2021 12:21	Dale L. Simmons	2259493
	07/02/2021			07/10/2021 12:32	Dale L. Simmons	2259495
	07/02/2021			07/10/2021 12:40	Dale L. Simmons	2259512
	07/02/2021			07/10/2021 16:00	Dale L. Simmons	2259492
	07/02/2021			07/13/2021 18:59	Dale L. Simmons	2259496
	07/02/2021			07/13/2021 19:13	Dale L. Simmons	2259494
	07/02/2021			07/13/2021 19:18	Dale L. Simmons	2259497
SM 5310 B-2011	07/02/2021			07/08/2021 21:41	Touraj Touran	2259499
	07/02/2021			07/08/2021 21:54	Touraj Touran	2259503
	07/02/2021			07/08/2021 22:09	Touraj Touran	2259504
	07/02/2021			07/10/2021 06:41	Madeline Gruver	2259498
	07/02/2021			07/10/2021 06:55	Madeline Gruver	2259500
	07/02/2021			07/10/2021 07:08	Madeline Gruver	2259501
	07/02/2021			07/10/2021 07:21	Madeline Gruver	2259502
	07/02/2021			07/10/2021 08:00	Madeline Gruver	2259513