

Chemical Analysis Report

SO-DIST-2021-07-29-01

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

Event Description: **2021 SMP : Charlotte Harbor**
Request ID: **RQ-2021-06-14-12**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

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: 24-AUG-2021 13:16

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: Trailer Park Canal

Collection Date/Time: 07/28/2021 10:00

Field ID: G3SD0072

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265700	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P401728	
	SM 2320 B-2011	Total Alkalinity	94	A	mg CaCO3/L	P401792	
	SM 2540 D-2011	TSS	4	I	mg/L	P402226	
	SM 4500 F-C-2011	Fluoride	0.40		mg F/L	P401794	
2265701	EPA 350.1 Rev. 2.0	Ammonia-N	0.27		mg N/L	P402268	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P402499	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P401870	
	EPA 365.1 Rev. 2.0	Total-P	0.47		mg P/L	P401763	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P402467	
2265702	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.37		mg P/L	P401710	
2265737	EPA 200.7 Rev. 4.4	Calcium	123		mg/L	P401704	
		Iron	410		ug/L	P401704	
		Magnesium	276		mg/L	P401704	
		Manganese	40		ug/L	P401704	
		Zinc	15	U	ug/L	P401704	
	EPA 200.8 Rev. 5.4	Aluminum	93	I	ug/L	P401704	
		Antimony	0.20	U	ug/L	P401704	
		Arsenic	2.96		ug/L	P401704	
		Beryllium	0.040	U	ug/L	P401704	
		Cadmium	0.080	U	ug/L	P401704	
		Chromium	1.6	U	ug/L	P401704	
		Copper	3.7		ug/L	P401704	
		Lead	0.80	U	ug/L	P401704	
		Nickel	2.0	U	ug/L	P401704	
		Selenium	0.80	U	ug/L	P401704	
		Silver	0.040	U	ug/L	P401704	
		Thallium	0.40	U	ug/L	P401704	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Coral Creek East

Collection Date/Time: 07/28/2021 11:05

Field ID: G2SD0046

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265703	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P401728	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P402031	
	SM 2540 D-2011	TSS	3	UA	mg/L	P402229	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P402036	
2265705	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P402124	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P402499	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P401870	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P401763	
	SM 5310 B-2011	Organic Carbon	30		mg C/L	P402251	
2265707	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401710	

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: FB

Collection Date/Time: 07/28/2021 11:25

Field ID: FB_07282021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265709	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P401728	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P401791	
	SM 2540 D-2011	TSS	2	U	mg/L	P402226	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P401793	
2265710	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P402180	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P402546	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P402438	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P402011	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P402467	
2265711	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401711	

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: Coral Creek (East) Upstream of Golf Course

Collection Date/Time: 07/28/2021 12:40

Field ID: G2SD0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265704	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P401728	
	SM 2320 B-2011	Total Alkalinity	105		mg CaCO3/L	P401792	
	SM 2540 D-2011	TSS	4	I	mg/L	P402229	
	SM 4500 F-C-2011	Fluoride	0.35		mg F/L	P401941	
2265706	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P402124	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P402526	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P401870	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P401763	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P402251	
2265708	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P401710	

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: P401728

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401704

Component	Result	Code	Units
Calcium	0.24	I	mg/L
Iron	30	U	ug/L
Magnesium	0.062	I	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401704

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0
Batch ID: P402124

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402499

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402546

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402438

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401763

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401710

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401711

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

Reference Method: SM 2320 B-2011
Batch ID: P401791

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P401792

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

Reference Method: SM 2320 B-2011
Batch ID: P402031

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

Reference Method: SM 2540 D-2011
Batch ID: P402226

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P402229

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401794

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401941

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402036

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P402251

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P402467

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: P401704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	112		P	85 - 115
Iron	109		P	85 - 115
Magnesium	110		P	85 - 115
Manganese	104		P	85 - 115
Zinc	86.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	100		P	85 - 115
Beryllium	102		P	85 - 115
Cadmium	98.3		P	85 - 115
Chromium	98.9		P	85 - 115
Copper	98.7		P	85 - 115
Lead	99.2		P	85 - 115
Nickel	100		P	85 - 115
Selenium	103		P	85 - 115
Silver	107		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402124

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P402546

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401870

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402438

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401763

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: P402011

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: P401710

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Reference Method: SM 2320 B-2011

Batch ID: P401791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011

Batch ID: P401792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P402031

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P401794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P401941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P402036

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P402251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P402467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265737	Iron	111	109	P/P	70 - 130
2265737	Manganese	89.3	87.3	P/P	70 - 130
2265737	Zinc	84.4	85.0	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265737	Aluminum	102	100	P/P	70 - 130
2265737	Antimony	105	103	P/P	70 - 130
2265737	Arsenic	113	111	P/P	70 - 130
2265737	Beryllium	112	107	P/P	70 - 130
2265737	Cadmium	95.9	93.8	P/P	70 - 130
2265737	Chromium	104	102	P/P	70 - 130
2265737	Copper	101	98.6	P/P	70 - 130
2265737	Lead	107	105	P/P	70 - 130
2265737	Nickel	114	112	P/P	70 - 130
2265737	Selenium	101	99.8	P/P	70 - 130
2265737	Silver	102	101	P/P	70 - 130
2265737	Thallium	111	110	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267909	Ammonia-N	102	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265654	Ammonia-N	98.2	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266963	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265559	Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265722	Kjeldahl Nitrogen	106	108	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266319	Kjeldahl Nitrogen	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265721	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265654	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265721	Total-P	102	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265120	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265870	O-Phosphate-P	94.6	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265840	O-Phosphate-P	99.4	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265774	Fluoride	99.6	98.9	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P401794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265700	Fluoride	101	99.8	P/P	92 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P401941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265704	Fluoride	101	102	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P402036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2266796	Fluoride	97.9	97.9	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P402251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265394	Organic Carbon	94.2	96.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P402467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265500	Organic Carbon	98.9	98.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P401728

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265675	Turbidity	4.71	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401704

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265737	Calcium	1.09	Spike	P	0 - 20
2265737	Iron	1.79	Spike	P	0 - 20
2265737	Magnesium	1.07	Spike	P	0 - 20
2265737	Manganese	1.78	Spike	P	0 - 20
2265737	Zinc	0.713	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401704

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265737	Aluminum	2.22	Spike	P	0 - 20
2265737	Antimony	1.92	Spike	P	0 - 20
2265737	Arsenic	1.98	Spike	P	0 - 20
2265737	Beryllium	4.85	Spike	P	0 - 20
2265737	Cadmium	2.12	Spike	P	0 - 20
2265737	Chromium	1.97	Spike	P	0 - 20
2265737	Copper	2.34	Spike	P	0 - 20
2265737	Lead	2.03	Spike	P	0 - 20
2265737	Nickel	1.76	Spike	P	0 - 20
2265737	Selenium	1.43	Spike	P	0 - 20
2265737	Silver	1.53	Spike	P	0 - 20
2265737	Thallium	0.949	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402124

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267909	Ammonia-N	2.16	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402180

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265654	Ammonia-N	0.381	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402268

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266963	Ammonia-N	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265559	Kjeldahl Nitrogen	0.380	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265722	Kjeldahl Nitrogen	0.827	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266319	Kjeldahl Nitrogen	0.426	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265721	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265654	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265721	Total-P	2.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265120	Total-P	0.787	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265870	O-Phosphate-P	3.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265840	O-Phosphate-P	0.910	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P401791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265774	Total Alkalinity	0.925	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P401792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265700	Total Alkalinity	0.908	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P402031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266796	Total Alkalinity	2.15	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265774	Fluoride	0.460	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P401794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265700	Fluoride	0.499	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P401941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265704	Fluoride	0.448	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P402036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2266796	Fluoride	0.0	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P402251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265394	Organic Carbon	2.19	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P402467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265500	Organic Carbon	0.131	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: A106918

Included Lab Sample IDs: 2265702, 2265707, 2265708, 2265711

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.8	P/P	90 - 110
O-Phosphate-P	99.8	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106926

Included Lab Sample IDs: 2265700, 2265703, 2265704, 2265709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106958

Included Lab Sample IDs: 2265737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	108	108	P/P	90 - 110
Iron	106	107	P/P	90 - 110
Magnesium	106	107	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106969

Included Lab Sample IDs: 2265700, 2265704, 2265709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.6	P/P	90 - 110
Total Alkalinity	104	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106969

Included Lab Sample IDs: 2265700, 2265709

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106978

Included Lab Sample IDs: 2265705, 2265706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	96.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106982

Included Lab Sample IDs: 2265737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	96.8	102	P/P	90 - 110
Zinc	94.2	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106984

Included Lab Sample IDs: 2265737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	104	P/P	90 - 110
Antimony	103	104	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Beryllium	101	103	P/P	90 - 110
Cadmium	99.6	100	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Nickel	107	107	P/P	90 - 110
Selenium	99.5	99.8	P/P	90 - 110
Silver	98.5	99.1	P/P	90 - 110
Thallium	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106997

Included Lab Sample IDs: 2265701, 2265705, 2265706

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107000

Included Lab Sample IDs: 2265737

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	98.6	95.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107027

Included Lab Sample IDs: 2265704

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107028

Included Lab Sample IDs: 2265701

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

Reference Method: SM 2320 B-2011

Run ID: A107058

Included Lab Sample IDs: 2265703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A107058

Included Lab Sample IDs: 2265703

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107092

Included Lab Sample IDs: 2265710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107098

Included Lab Sample IDs: 2265705, 2265706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107121

Included Lab Sample IDs: 2265710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107149

Included Lab Sample IDs: 2265705, 2265706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107154

Included Lab Sample IDs: 2265701

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107236

Included Lab Sample IDs: 2265710

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

Reference Method: SM 5310 B-2011

Run ID: A107246

Included Lab Sample IDs: 2265701, 2265710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107303

Included Lab Sample IDs: 2265701, 2265705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107325

Included Lab Sample IDs: 2265706, 2265710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	104	104	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					4.71	
EPA 200.7 Rev. 4.4	Calcium	112					1.09
	Iron	109	111	109			1.79
	Magnesium	110					1.07
	Manganese	104	89.3	87.3			1.78
	Zinc	86.4	84.4	85.0			0.713
EPA 200.8 Rev. 5.4	Aluminum	102	102	100			2.22
	Antimony	103	105	103			1.92
	Arsenic	100	113	111			1.98
	Beryllium	102	112	107			4.85
	Cadmium	98.3	95.9	93.8			2.12
	Chromium	98.9	104	102			1.97
	Copper	98.7	101	98.6			2.34
	Lead	99.2	107	105			2.03
	Nickel	100	114	112			1.76
	Selenium	103	101	99.8			1.43
	Silver	107	102	101			1.53
	Thallium	101	111	110			0.949
EPA 350.1 Rev. 2.0	Ammonia-N	103	102	106			2.16
	Ammonia-N	101	98.2	97.8			0.381
	Ammonia-N	100	101	103			1.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	101	100			0.380
	Kjeldahl Nitrogen	104	108	106			0.827
	Kjeldahl Nitrogen	105	106	105			0.426
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100			0.0
	NO2NO3-N	101	101	102			0.494
EPA 365.1 Rev. 2.0	Total-P	104	102	99.0			2.38
	Total-P	105	105	106			0.787
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	94.6	98.0			3.11
	O-Phosphate-P	99.0	99.4	98.5			0.910
SM 2320 B-2011	Total Alkalinity	101				0.925	
	Total Alkalinity	101				0.908	
	Total Alkalinity	103				2.15	
SM 4500 F-C-2011	Fluoride	98.5	99.6	98.9			0.460
	Fluoride	99.9	101	99.8			0.499
	Fluoride	102	101	102			0.448
	Fluoride	98.4	97.9	97.9			0.0
SM 5310 B-2011	Organic Carbon	97.6	94.2	96.6			2.19
	Organic Carbon	94.6	98.9	98.7			0.131

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2265700, 2265703, 2265704, 2265709
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2265737
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2265737
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2265701, 2265705, 2265706, 2265710
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2265701, 2265705, 2265706, 2265710
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2265701, 2265705, 2265706, 2265710
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2265701, 2265705, 2265706, 2265710

Reference Method Descriptions

Method	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2265702, 2265707, 2265708, 2265711
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2265700, 2265703, 2265704, 2265709
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2265700, 2265703, 2265704, 2265709
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2265700, 2265703, 2265704, 2265709
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2265701, 2265705, 2265706, 2265710

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	07/29/2021			07/29/2021 16:09	Blanca Fach	2265700, 2265703, 2265704, 2265709
EPA 200.7 Rev. 4.4	07/29/2021	07/29/2021 14:20	Elliott D. Healy	07/31/2021 01:40	Betina Topolski	2265737
	07/29/2021	07/29/2021 14:20	Elliott D. Healy	08/02/2021 15:55	Betina Topolski	2265737
EPA 200.8 Rev. 5.4	07/29/2021	07/29/2021 14:20	Elliott D. Healy	08/03/2021 00:47	Alexander Thompson	2265737
	07/29/2021	07/29/2021 14:20	Elliott D. Healy	08/03/2021 02:23	Alexander Thompson	2265737
	07/29/2021	07/29/2021 14:20	Elliott D. Healy	08/03/2021 12:18	Alexander Thompson	2265737
EPA 350.1 Rev. 2.0	07/29/2021			08/06/2021 14:41	Roberta Tatti	2265705
	07/29/2021			08/06/2021 14:42	Roberta Tatti	2265706
	07/29/2021			08/09/2021 12:58	Ping Hua	2265710
	07/29/2021			08/10/2021 14:22	Roberta Tatti	2265701
EPA 351.2 Rev. 2.0	07/29/2021	08/16/2021 18:04	Madeline Gruver	08/17/2021 14:01	Virginia P. Brown	2265701
	07/29/2021	08/16/2021 18:04	Madeline Gruver	08/17/2021 14:03	Virginia P. Brown	2265705
	07/29/2021	08/16/2021 18:04	Madeline Gruver	08/18/2021 14:41	Virginia P. Brown	2265706
	07/29/2021	08/17/2021 17:46	Madeline Gruver	08/18/2021 12:25	Virginia P. Brown	2265710
EPA 353.2 Rev. 2.0	07/29/2021			08/03/2021 11:06	Beverly Y. Sanders	2265701
	07/29/2021			08/03/2021 11:07	Beverly Y. Sanders	2265705
	07/29/2021			08/03/2021 11:08	Beverly Y. Sanders	2265706
	07/29/2021			08/13/2021 09:50	Beverly Y. Sanders	2265710
EPA 365.1 Rev. 2.0	07/29/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 10:28	Shengyu Ding	2265701
	07/29/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 12:47	Shengyu Ding	2265705
	07/29/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 12:48	Shengyu Ding	2265706
	07/29/2021	08/05/2021 15:45	Simonne.V. Calhoun	08/06/2021 12:34	Shengyu Ding	2265710
EPA 365.1 Rev. 2.0 dissolved	07/29/2021			07/29/2021 13:54	Lipi Saha	2265702
	07/29/2021			07/29/2021 13:55	Lipi Saha	2265707
	07/29/2021			07/29/2021 13:56	Lipi Saha	2265708
	07/29/2021			07/29/2021 14:06	Lipi Saha	2265711
SM 2320 B-2011	07/29/2021			07/30/2021 19:00	Dale L. Simmons	2265709
	07/29/2021			07/30/2021 22:57	Dale L. Simmons	2265700
	07/29/2021			07/30/2021 23:12	Dale L. Simmons	2265704
	07/29/2021			08/04/2021 18:26	Dale L. Simmons	2265703
SM 2540 D-2011	07/29/2021			08/03/2021 14:36	Yijie Li	2265700, 2265703, 2265704, 2265709
SM 4500 F-C-2011	07/29/2021			07/30/2021 19:00	Dale L. Simmons	2265709
	07/29/2021			07/30/2021 21:22	Dale L. Simmons	2265700
	07/29/2021			08/03/2021 21:42	Dale L. Simmons	2265704
	07/29/2021			08/04/2021 18:26	Dale L. Simmons	2265703
SM 5310 B-2011	07/29/2021			08/10/2021 09:24	Madeline Gruver	2265705
	07/29/2021			08/10/2021 09:37	Madeline Gruver	2265706
	07/29/2021			08/11/2021 23:53	Madeline Gruver	2265701
	07/29/2021			08/12/2021 00:06	Madeline Gruver	2265710