Chemical Analysis Report

CEN-DIST-2022-07-07-01

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

Event Description: **Terrace, Lucerne, Giles - DEP Samples**
Request ID: **RQ-2022-07-04-46**
Customer: **CEN-DIST**
Project ID: **SMP**

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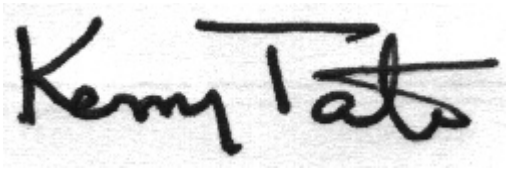
Date Certified: 26-JUL-2022 08:49



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: Lake Lucerne SW **Collection Date/Time: 07/06/2022 12:13**

Field ID: G4CE0202 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339684	DEP SOP: NU-094-1	Color (true)	7.1		PCU	P416282	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P416290	
	EPA 300.0 Rev. 2.1	Chloride	9.4		mg Cl/L	P416731	
		Sulfate	14		mg SO4/L	P416734	
	SM 2320 B-2011	Total Alkalinity	88		mg CaCO3/L	P416658	RPD
	SM 2540 C-2011	TDS	137		mg/L	P416546	
	SM 2540 D-2011	TSS	3	I	mg/L	P416549	
	SM 4500-F- C-2011	Fluoride	0.097	I	mg F/L	P417025	
2339686	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P416422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P416459	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416651	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P416399	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P416395	
2339688	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416285	

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: Lake Terrace SW of Center **Collection Date/Time: 07/06/2022 11:34**

Field ID: G4CE0153 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339681	DEP SOP: NU-094-1	Color (true)	11		PCU	P416282	
	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P416290	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P416731	
		Sulfate	25	A	mg SO4/L	P416734	
	SM 2320 B-2011	Total Alkalinity	34		mg CaCO3/L	P416656	
	SM 2540 C-2011	TDS	120		mg/L	P416546	
	SM 2540 D-2011	TSS	9	I	mg/L	P416549	
	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P417025	
2339682	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P416421	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P416459	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416651	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P416399	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P416395	
2339683	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416285	
2339698	EPA 200.7 Rev. 4.4	Calcium	19.6		mg/L	P416378	
		Iron	30	U	ug/L	P416378	
		Magnesium	2.83		mg/L	P416378	
		Potassium	3.8		mg/L	P416378	
		Sodium	14.1		mg/L	P416378	
		Strontium	48.6		ug/L	P416378	
		Tin	3.0	U	ug/L	P416378	
		Titanium	0.85	I	ug/L	P416378	
		Vanadium	4.6	I	ug/L	P416378	
		Zinc	5.0	U	ug/L	P416378	
	EPA 200.8 Rev. 5.4	Aluminum	215		ug/L	P416378	
		Antimony	0.32		ug/L	P416378	
		Arsenic	0.49		ug/L	P416378	
		Barium	16.2		ug/L	P416378	
		Beryllium	0.010	U	ug/L	P416378	
		Boron	34.6		ug/L	P416378	
		Cadmium	0.020	U	ug/L	P416378	
		Chromium	0.40	U	ug/L	P416378	
		Cobalt	0.037	I	ug/L	P416378	
		Copper	3.11		ug/L	P416616	
		Lead	0.30	I	ug/L	P416616	
		Manganese	8.34		ug/L	P416378	
		Molybdenum	0.52	I	ug/L	P416378	
		Nickel	0.50	U	ug/L	P416616	
		Selenium	0.20	U	ug/L	P416378	
		Silver	0.010	U	ug/L	P416378	
		Thallium	0.10	U	ug/L	P416378	
	SM 2340 B-2011	Hardness	60.6		mg/L	P416378	

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: Lake Giles @ Center **Collection Date/Time: 07/06/2022 10:16**

Field ID: G4CE0193 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339685	DEP SOP: NU-094-1	Color (true)	3.9	I	PCU	P416282	
	EPA 180.1 Rev. 2.0	Turbidity	0.80	I	NTU	P416290	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P416731	
		Sulfate	23		mg SO4/L	P416734	
	SM 2320 B-2011	Total Alkalinity	7.6	AJ	mg CaCO3/L	P416658	RPD
	SM 2540 C-2011	TDS	89		mg/L	P416546	
	SM 2540 D-2011	TSS	2	U	mg/L	P416549	
	SM 4500-F- C-2011	Fluoride	0.044	I	mg F/L	P417025	
2339687	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P416422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P416577	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P416712	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P416399	
	SM 5310 B-2011	Organic Carbon	3.3		mg C/L	P416395	
2339689	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P416285	

Ref. Method and Comment:
SM 2320 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.
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: DEP SOP: NU-094-1
Batch ID: P416282

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416378

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416378

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416616

Component	Result	Code	Units
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416422

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416459

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416712

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416285

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

Reference Method: SM 2320 B-2011
Batch ID: P416656

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

Reference Method: SM 2320 B-2011
Batch ID: P416658

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

Reference Method: SM 2540 C-2011
Batch ID: P416546

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416549

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417025

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416395

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P416282

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	103		P	85 - 115
Sodium	103		P	85 - 115
Strontium	101		P	85 - 115
Tin	101		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	97.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	93.8		P	85 - 115
Boron	107		P	85 - 115
Cadmium	96.1		P	85 - 115
Chromium	98.4		P	85 - 115
Cobalt	101		P	85 - 115
Manganese	98.6		P	85 - 115
Molybdenum	99.3		P	85 - 115
Selenium	99.0		P	85 - 115
Silver	98.9		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	99.5		P	85 - 115
Lead	99.6		P	85 - 115
Nickel	102		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416422

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416459

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416712

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P416656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P416658

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P417025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338848	Calcium	105	105	P/P	80 - 120
2338848	Iron	98.8	104	P/P	80 - 120
2338848	Magnesium	100	103	P/P	80 - 120
2338848	Potassium	106	105	P/P	80 - 120
2338848	Sodium	101	105	P/P	80 - 120
2338848	Strontium	101	102	P/P	80 - 120
2338848	Tin	102	101	P/P	80 - 120
2338848	Titanium	102	102	P/P	80 - 120
2338848	Vanadium	101	100	P/P	80 - 120
2338848	Zinc	97.0	96.7	P/P	80 - 120
2339748	Calcium	105		P	80 - 120
2339748	Iron	105		P	80 - 120
2339748	Magnesium	104		P	80 - 120
2339748	Potassium	105		P	80 - 120
2339748	Sodium	106		P	80 - 120
2339748	Strontium	104		P	80 - 120
2339748	Tin	100		P	80 - 120
2339748	Titanium	104		P	80 - 120
2339748	Vanadium	103		P	80 - 120
2339748	Zinc	97.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2338848	Aluminum	100	99.8	P/P	80 - 120
2338848	Antimony	98.6	99.3	P/P	80 - 120
2338848	Arsenic	97.4	99.5	P/P	80 - 120
2338848	Barium	102	103	P/P	80 - 120
2338848	Beryllium	94.2	94.3	P/P	80 - 120
2338848	Boron	105	104	P/P	80 - 120
2338848	Cadmium	94.7	95.3	P/P	80 - 120
2338848	Chromium	96.9	97.9	P/P	80 - 120
2338848	Cobalt	98.3	99.4	P/P	80 - 120
2338848	Manganese	96.2	96.4	P/P	80 - 120
2338848	Molybdenum	98.8	98.9	P/P	80 - 120
2338848	Selenium	95.8	98.1	P/P	80 - 120
2338848	Silver	97.0	97.4	P/P	80 - 120
2338848	Thallium	97.3	99.0	P/P	80 - 120
2339748	Aluminum	99.6		P	80 - 120
2339748	Antimony	101		P	80 - 120
2339748	Arsenic	102		P	80 - 120
2339748	Barium	103		P	80 - 120
2339748	Beryllium	96.2		P	80 - 120
2339748	Boron	105		P	80 - 120
2339748	Cadmium	95.4		P	80 - 120
2339748	Chromium	93.7		P	80 - 120
2339748	Cobalt	99.6		P	80 - 120
2339748	Manganese	96.1		P	80 - 120
2339748	Molybdenum	101		P	80 - 120
2339748	Selenium	97.8		P	80 - 120
2339748	Silver	96.3		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339748	Thallium	97.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339618	Copper	91.4	96.9	P/P	80 - 120
2339618	Lead	93.6	99.0	P/P	80 - 120
2339618	Nickel	91.6	97.4	P/P	80 - 120
2339698	Copper	98.2		P	80 - 120
2339698	Lead	98.9		P	80 - 120
2339698	Nickel	97.6		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339681	Chloride	95.7		P	90 - 110
2339743	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339681	Sulfate	92.2		P	90 - 110
2339743	Sulfate	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339604	Ammonia-N	97.0	95.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339687	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339532	Kjeldahl Nitrogen	99.3	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339023	Kjeldahl Nitrogen	98.0	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339556	NO2NO3-N	94.0	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2340225	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339682	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339504	O-Phosphate-P	96.1	97.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339685	Fluoride	99.7	99.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339524	Organic Carbon	99.9	99.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339602	Color (true)	0.408	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339270	Turbidity	6.36	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P416378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338848	Calcium	0.135	Spike	P	0 - 20
2338848	Iron	5.50	Spike	P	0 - 20
2338848	Magnesium	2.46	Spike	P	0 - 20
2338848	Potassium	0.980	Spike	P	0 - 20
2338848	Sodium	2.79	Spike	P	0 - 20
2338848	Strontium	0.826	Spike	P	0 - 20
2338848	Tin	1.10	Spike	P	0 - 20
2338848	Titanium	0.371	Spike	P	0 - 20
2338848	Vanadium	0.343	Spike	P	0 - 20
2338848	Zinc	0.330	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2338848	Aluminum	0.500	Spike	P	0 - 20
2338848	Antimony	0.754	Spike	P	0 - 20
2338848	Arsenic	2.07	Spike	P	0 - 20
2338848	Barium	0.873	Spike	P	0 - 20
2338848	Beryllium	0.146	Spike	P	0 - 20
2338848	Boron	0.344	Spike	P	0 - 20
2338848	Cadmium	0.588	Spike	P	0 - 20
2338848	Chromium	0.967	Spike	P	0 - 20
2338848	Cobalt	1.15	Spike	P	0 - 20
2338848	Manganese	0.202	Spike	P	0 - 20
2338848	Molybdenum	0.114	Spike	P	0 - 20
2338848	Selenium	2.31	Spike	P	0 - 20
2338848	Silver	0.413	Spike	P	0 - 20
2338848	Thallium	1.72	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339618	Copper	5.79	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P416616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339618	Lead	5.58	Spike	P	0 - 20
2339618	Nickel	6.08	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339681	Chloride	0.443	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339681	Sulfate	0.455	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339604	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339687	Ammonia-N	0.789	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339532	Kjeldahl Nitrogen	4.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339023	Kjeldahl Nitrogen	1.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339556	NO2NO3-N	1.87	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2340225	NO2NO3-N	0.380	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339682	Total-P	1.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P416285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339504	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P416656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339964	Total Alkalinity	0.890	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P416658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339685	Total Alkalinity	5.99	Sample	F	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P416546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339648	TDS	4.76	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339685	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339524	Organic Carbon	0.138	Spike	P	0 - 20

Quality Assurance Report
Precision

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A113337
Included Lab Sample IDs: 2339681, 2339684, 2339685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A113338
Included Lab Sample IDs: 2339683, 2339688, 2339689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A113341
Included Lab Sample IDs: 2339681, 2339684, 2339685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 5310 B-2011
Run ID: A113409
Included Lab Sample IDs: 2339682, 2339686, 2339687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113417
Included Lab Sample IDs: 2339682, 2339686, 2339687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.4	97.5	P/P	90 - 110
Ammonia-N	97.5	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A113424
Included Lab Sample IDs: 2339698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.3	101	P/P	90 - 110
Antimony	98.1	98.6	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Barium	99.0	99.3	P/P	90 - 110
Beryllium	96.2	95.8	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Cadmium	97.1	98.4	P/P	90 - 110
Chromium	98.1	99.0	P/P	90 - 110
Cobalt	100	100	P/P	90 - 110
Manganese	98.3	98.6	P/P	90 - 110
Molybdenum	98.6	99.4	P/P	90 - 110
Selenium	97.6	97.5	P/P	90 - 110
Silver	98.4	99.4	P/P	90 - 110
Thallium	97.5	94.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A113427
Included Lab Sample IDs: 2339698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	98.9	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	101	100	P/P	90 - 110
Sodium	104	101	P/P	90 - 110
Strontium	102	99.0	P/P	90 - 110
Tin	98.2	96.7	P/P	90 - 110
Titanium	101	99.2	P/P	90 - 110
Vanadium	99.7	98.2	P/P	90 - 110
Zinc	94.9	94.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A113462
Included Lab Sample IDs: 2339681, 2339684, 2339685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.2	96.5	P/P	90 - 110
Chloride	96.5	98.5	P/P	90 - 110
Sulfate	96.0	96.2	P/P	90 - 110
Sulfate	96.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113477
Included Lab Sample IDs: 2339682

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113490
Included Lab Sample IDs: 2339686, 2339687

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113503
Included Lab Sample IDs: 2339682, 2339686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	96.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A113504
Included Lab Sample IDs: 2339681, 2339684, 2339685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.3	P/P	90 - 110
Total Alkalinity	98.6	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A113519
Included Lab Sample IDs: 2339698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	92.4	91.8	P/P	90 - 110
Lead	91.9	92.7	P/P	90 - 110
Nickel	92.6	92.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113524
Included Lab Sample IDs: 2339682, 2339686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113527
Included Lab Sample IDs: 2339687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113548
Included Lab Sample IDs: 2339687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	97.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A113658
Included Lab Sample IDs: 2339681, 2339684, 2339685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	101	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
DEP SOP: NU-094-1	Color (true)	99.5					0.408	
EPA 180.1 Rev. 2.0	Turbidity	97.2					6.36	
EPA 200.7 Rev. 4.4	Calcium	104	105	105	105			0.135
	Iron	102	98.8	104	105			5.50
	Magnesium	101	100	103	104			2.46
	Potassium	103	106	105	105			0.980
	Sodium	103	101	105	106			2.79
	Strontium	101	101	102	104			0.826
	Tin	101	102	101	100			1.10
	Titanium	101	102	102	104			0.371
	Vanadium	100	103	101	100			0.343
	Zinc	97.5	97.0	96.7	97.0			0.330
EPA 200.8 Rev. 5.4	Aluminum	102	100	99.8	99.6			0.500
	Antimony	100	98.6	99.3	101			0.754
	Arsenic	101	97.4	99.5	102			2.07
	Barium	104	102	103	103			0.873
	Beryllium	93.8	94.2	94.3	96.2			0.146
	Boron	107	105	104	105			0.344
	Cadmium	96.1	94.7	95.3	95.4			0.588
	Chromium	98.4	96.9	97.9	93.7			0.967
	Cobalt	101	98.3	99.4	99.6			1.15
	Copper	99.5	91.4	96.9	98.2			5.79
	Lead	99.6	93.6	99.0	98.9			5.58
	Manganese	98.6	96.2	96.4	96.1			0.202
	Molybdenum	99.3	98.8	98.9	101			0.114
	Nickel	102	91.6	97.4	97.6			6.08
	Selenium	99.0	95.8	98.1	97.8			2.31
	Silver	98.9	97.0	97.4	96.3			0.413
	Thallium	98.6	97.3	99.0	97.3			1.72
EPA 300.0 Rev. 2.1	Chloride	98.0	95.7	95.4			0.443	
	Sulfate	97.6	92.2	94.7			0.455	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	97.0	95.8				1.16
	Ammonia-N	95.6	102	101				0.789
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	99.3	104				4.82
	Kjeldahl Nitrogen	97.1	98.0	101				1.61
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	94.0	96.0				1.87
	NO2NO3-N	100	101	102				0.380
EPA 365.1 Rev. 2.0	Total-P	103	104	106				1.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	96.1	97.3				1.13
SM 2320 B-2011	Total Alkalinity	99.9					0.890	
	Total Alkalinity	99.3					5.99	
SM 2540 C-2011	TDS						4.76	
SM 4500-F- C-2011	Fluoride	100	99.7	99.7				0.0
SM 5310 B-2011	Organic Carbon	97.8	99.9	99.7				0.138

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2339681, 2339684, 2339685
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2339681, 2339684, 2339685
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2339698

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2339698
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2339681, 2339684, 2339685
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2339681, 2339684, 2339685
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2339682, 2339686, 2339687
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2339682, 2339686, 2339687
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2339682, 2339686, 2339687
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2339682, 2339686, 2339687
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2339683, 2339688, 2339689
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2339681, 2339684, 2339685
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2339698
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2339681, 2339684, 2339685
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2339681, 2339684, 2339685
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2339681, 2339684, 2339685
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2339682, 2339686, 2339687

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	07/07/2022			07/07/2022 14:45	Blanca Fach	2339681
	07/07/2022			07/07/2022 14:46	Blanca Fach	2339684
	07/07/2022			07/07/2022 14:47	Blanca Fach	2339685
EPA 180.1 Rev. 2.0	07/07/2022			07/07/2022 14:42	Anna M. Plaviak	2339681
	07/07/2022			07/07/2022 14:44	Anna M. Plaviak	2339684
	07/07/2022			07/07/2022 14:45	Anna M. Plaviak	2339685
EPA 200.7 Rev. 4.4	07/07/2022	07/11/2022 09:57	Mackenzie Hunt	07/11/2022 20:49	McKinley C Carter	2339698
EPA 200.8 Rev. 5.4	07/07/2022	07/11/2022 09:57	Mackenzie Hunt	07/11/2022 18:28	Alexander Thompson	2339698
	07/07/2022	07/14/2022 09:21	Mackenzie Hunt	07/15/2022 02:09	Emily M Philpot	2339698
EPA 300.0 Rev. 2.1	07/07/2022			07/14/2022 18:53	Anna M. Plaviak	2339681
	07/07/2022			07/14/2022 22:18	Anna M. Plaviak	2339684
	07/07/2022			07/14/2022 22:30	Anna M. Plaviak	2339685
EPA 350.1 Rev. 2.0	07/07/2022			07/11/2022 12:09	Ping Hua	2339682
	07/07/2022			07/11/2022 12:22	Ping Hua	2339687
	07/07/2022			07/11/2022 12:26	Ping Hua	2339686
EPA 351.2 Rev. 2.0	07/07/2022	07/13/2022 14:48	Samantha L Bates	07/14/2022 13:40	Alexandra J Mattheus	2339682
	07/07/2022	07/13/2022 14:48	Samantha L Bates	07/14/2022 13:42	Alexandra J Mattheus	2339686
	07/07/2022	07/14/2022 13:55	Samantha L Bates	07/15/2022 19:23	Alexandra J Mattheus	2339687
EPA 353.2 Rev. 2.0	07/07/2022			07/14/2022 10:55	Judith K. Clark	2339682
	07/07/2022			07/14/2022 10:56	Judith K. Clark	2339686
	07/07/2022			07/15/2022 11:08	Beverly Y. Sanders	2339687
EPA 365.1 Rev. 2.0	07/07/2022	07/13/2022 09:52	Adam P Silver	07/13/2022 14:51	James L Waggerby	2339682
	07/07/2022	07/13/2022 09:52	Adam P Silver	07/13/2022 18:00	James L Waggerby	2339686
	07/07/2022	07/13/2022 09:52	Adam P Silver	07/13/2022 18:01	James L Waggerby	2339687
EPA 365.1 Rev. 2.0 dissolved	07/07/2022			07/07/2022 15:32	Chandler E Cox	2339683
	07/07/2022			07/07/2022 15:33	Chandler E Cox	2339688
	07/07/2022			07/07/2022 15:34	Chandler E Cox	2339689
SM 2320 B-2011	07/07/2022			07/14/2022 00:15	Dale L. Simmons	2339681
	07/07/2022			07/14/2022 01:11	Dale L. Simmons	2339685
	07/07/2022			07/14/2022 02:11	Dale L. Simmons	2339684
SM 2340 B-2011	07/07/2022			07/11/2022 20:49	McKinley C Carter	2339698
SM 2540 C-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339681, 2339684, 2339685
SM 2540 D-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339681, 2339684, 2339685
SM 4500-F- C-2011	07/07/2022			07/21/2022 12:22	Dale L. Simmons	2339685
	07/07/2022			07/21/2022 12:41	Dale L. Simmons	2339681
	07/07/2022			07/21/2022 12:46	Dale L. Simmons	2339684
SM 5310 B-2011	07/07/2022			07/09/2022 03:57	Khloe J Berg	2339682
	07/07/2022			07/09/2022 04:13	Khloe J Berg	2339686
	07/07/2022			07/09/2022 04:27	Khloe J Berg	2339687