

Chemical Analysis Report

NE-DIST-2022-03-08-01

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

Event Description: **Gainesville 2022**
Request ID: **RQ-2022-01-31-16**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 29-MAR-2022 08:20

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored background.

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: Bivens Arm lake

Collection Date/Time: 03/07/2022 12:10

Field ID: 20020097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2310965	DEP SOP: NU-094-1	Color (true)**	15		PCU	P410816	
	EPA 180.1 Rev. 2.0	Turbidity	30		NTU	P410819	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P411050	
		Sulfate	12		mg SO4/L	P411054	
	SM 2320 B-2011	Total Alkalinity	77		mg CaCO3/L	P410981	
	SM 2540 C-2011	TDS	133		mg/L	P411342	
	SM 2540 D-2011	TSS	30		mg/L	P411346	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P410984	
2310967	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P410877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.0		mg N/L	P411002	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P411089	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P411075	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P411058	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Glen Spring

Collection Date/Time: 03/07/2022 13:00

Field ID: G1NE0952

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2310971	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P410814	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P410820	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P411050	
		Sulfate	18		mg SO4/L	P411054	
	SM 2320 B-2011	Total Alkalinity	136		mg CaCO3/L	P410981	
	SM 2540 C-2011	TDS	232		mg/L	P411342	
	SM 2540 D-2011	TSS	2	U	mg/L	P411346	
	SM 4500 F-C-2011	Fluoride	0.29		mg F/L	P410984	
2310972	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P410877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P411002	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P411089	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P411075	
	SM 5310 B-2011	Organic Carbon	0.71	I	mg C/L	P411101	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Little Hatchet CR East at SR26

Collection Date/Time: 03/07/2022 11:50

Field ID: G1NE0948

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2310988	EPA 200.7 Rev. 4.4	Calcium	20.1		mg/L	P410837	
		Iron	380		ug/L	P410837	
		Magnesium	4.55		mg/L	P410837	
		Potassium	0.52	I	mg/L	P410837	
		Sodium	6.5		mg/L	P410837	
		Strontium	55.8		ug/L	P410837	
		Tin	3.0	U	ug/L	P410837	
		Titanium	0.84	I	ug/L	P411149	
		Vanadium	2.0	U	ug/L	P410837	
		Zinc	5.0	U	ug/L	P410837	
	EPA 200.8 Rev. 5.4	Aluminum	69		ug/L	P410837	RPD
		Antimony	0.059	I	ug/L	P410837	
		Arsenic	0.42		ug/L	P410837	
		Barium	8.88		ug/L	P410837	
		Beryllium	0.012	I	ug/L	P410837	
		Boron**	22.1		ug/L	P410837	
		Cadmium	0.020	U	ug/L	P410837	
		Chromium	0.40	U	ug/L	P410837	
		Cobalt	0.142		ug/L	P410837	
		Copper	0.40	U	ug/L	P410837	
		Lead	0.20	U	ug/L	P410837	
		Manganese	13.3		ug/L	P410837	
		Molybdenum	0.15	I	ug/L	P410837	
		Nickel	0.50	U	ug/L	P410837	
		Selenium	0.20	U	ug/L	P410837	
		Silver	0.010	U	ug/L	P410837	
		Thallium	0.10	U	ug/L	P410837	
	SM 2340B	Hardness	68.9		mg/L	P410837	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and molybdenum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Upper Little Hatchet at Airport field

Collection Date/Time: 03/07/2022 12:45

Field ID: G1NE0949

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2310966	DEP SOP: NU-094-1	Color (true)**	100		PCU	P410814	
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P410820	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P411050	
		Sulfate	6.3		mg SO4/L	P411054	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P410981	
	SM 2540 C-2011	TDS	144	A	mg/L	P411342	
	SM 2540 D-2011	TSS	2	UA	mg/L	P411346	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P410984	
2310968	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P410877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P411002	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P411089	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P411075	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P411101	
2310987	EPA 200.7 Rev. 4.4	Calcium	25.8		mg/L	P410837	
		Iron	840		ug/L	P410837	
		Magnesium	6.05		mg/L	P410837	
		Potassium	1.2		mg/L	P410837	
		Sodium	5.5		mg/L	P410837	
		Strontium	50.9		ug/L	P410837	
		Tin	3.0	U	ug/L	P410837	
		Titanium	2.7	I	ug/L	P411149	
		Vanadium	2.5	I	ug/L	P410837	
		Zinc	5.0	I	ug/L	P410837	
	EPA 200.8 Rev. 5.4	Aluminum	256		ug/L	P410837	RPD
		Antimony	0.078	I	ug/L	P410837	
		Arsenic	0.88		ug/L	P410837	
		Barium	18.2		ug/L	P410837	
		Beryllium	0.046		ug/L	P410837	
		Boron**	22.2		ug/L	P410837	
		Cadmium	0.020	U	ug/L	P410837	
		Chromium	1.2	I	ug/L	P410837	
		Cobalt	0.175		ug/L	P410837	
		Copper	0.56	I	ug/L	P410837	
		Lead	0.36	I	ug/L	P410837	
		Manganese	12.4		ug/L	P410837	
		Molybdenum	0.26	I	ug/L	P410837	
		Nickel	0.54	I	ug/L	P410837	
		Selenium	0.20	U	ug/L	P410837	
		Silver	0.010	U	ug/L	P410837	
		Thallium	0.10	U	ug/L	P410837	
		Hardness	89.3		mg/L	P410837	
	SM 2340B						

Field ID: G1NE0949

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for aluminum and molybdenum are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P410814

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P410816

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410819

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410820

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410837

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
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411149

Component	Result	Code	Units
Titanium	0.75	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410837

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410837

Component	Result	Code	Units
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411050

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411054

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411002

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411089

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411075

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

Reference Method: SM 2320 B-2011
Batch ID: P410981

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P411342

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411346

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410984

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P411058

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

Reference Method: SM 5310 B-2011
Batch ID: P411101

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: P410814

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P410816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410819

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410820

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.7		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	106		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	104		P	85 - 115
Sodium	99.7		P	85 - 115
Strontium	104		P	85 - 115
Tin	106		P	85 - 115
Vanadium	97.9		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411149

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Titanium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.5		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	98.2		P	85 - 115
Boron	103		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	96.7		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cobalt	103		P	85 - 115
Copper	95.9		P	85 - 115
Lead	99.9		P	85 - 115
Manganese	98.5		P	85 - 115
Molybdenum	99.3		P	85 - 115
Nickel	98.4		P	85 - 115
Selenium	99.1		P	85 - 115
Silver	104		P	85 - 115
Thallium	95.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411050

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411054

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411002

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411089

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411075

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

Reference Method: SM 2320 B-2011
Batch ID: P410981

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P410984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P411058

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

Reference Method: SM 5310 B-2011
Batch ID: P411101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P410837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310490	Calcium	97.7		P	80 - 120
2310490	Iron	110	99.6	P/P	80 - 120
2310490	Magnesium	96.3		P	80 - 120
2310490	Potassium	98.0	95.9	P/P	80 - 120
2310490	Sodium	97.5		P	80 - 120
2310490	Strontium	99.1	98.4	P/P	80 - 120
2310490	Tin	98.2	97.5	P/P	80 - 120
2310490	Vanadium	94.0	94.0	P/P	80 - 120
2310490	Zinc	96.9	98.0	P/P	80 - 120
2310491	Calcium	100		P	80 - 120
2310491	Iron	106		P	80 - 120
2310491	Magnesium	100		P	80 - 120
2310491	Potassium	101		P	80 - 120
2310491	Sodium	99.4		P	80 - 120
2310491	Strontium	103		P	80 - 120
2310491	Tin	98.9		P	80 - 120
2310491	Vanadium	97.9		P	80 - 120
2310491	Zinc	100		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P411149

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312279	Titanium	99.3		P	80 - 120
2312474	Titanium	104	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P410837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310490	Antimony	101	98.7	P/P	80 - 120
2310490	Arsenic	103	103	P/P	80 - 120
2310490	Barium	106	105	P/P	80 - 120
2310490	Beryllium	99.5	102	P/P	80 - 120
2310490	Boron	108	109	P/P	80 - 120
2310490	Cadmium	102	101	P/P	80 - 120
2310490	Chromium	104	111	P/P	80 - 120
2310490	Cobalt	101	101	P/P	80 - 120
2310490	Copper	94.0	94.7	P/P	80 - 120
2310490	Lead	99.5	99.7	P/P	80 - 120
2310490	Manganese	101	103	P/P	80 - 120
2310490	Nickel	96.0	96.3	P/P	80 - 120
2310490	Selenium	98.3	97.7	P/P	80 - 120
2310490	Silver	102	103	P/P	80 - 120
2310490	Thallium	98.2	100	P/P	80 - 120
2310491	Aluminum	100		P	80 - 120
2310491	Antimony	105		P	80 - 120
2310491	Arsenic	104		P	80 - 120
2310491	Barium	104		P	80 - 120
2310491	Beryllium	95.6		P	80 - 120
2310491	Boron	108		P	80 - 120
2310491	Cadmium	103		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P410837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310491	Chromium	99.6		P	80 - 120
2310491	Cobalt	103		P	80 - 120
2310491	Copper	92.9		P	80 - 120
2310491	Lead	101		P	80 - 120
2310491	Manganese	101		P	80 - 120
2310491	Molybdenum	105		P	80 - 120
2310491	Nickel	94.6		P	80 - 120
2310491	Selenium	101		P	80 - 120
2310491	Silver	103		P	80 - 120
2310491	Thallium	98.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P411050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310648	Chloride	95.8		P	90 - 110
2310971	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P411054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310648	Sulfate	98.2		P	90 - 110
2310971	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P410877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310662	Ammonia-N	94.2	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P411002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310528	Kjeldahl Nitrogen	106	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P411089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310967	NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P411075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311082	Total-P	104	104	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P411058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310730	Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P411101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311473	Organic Carbon	99.6	98.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P410814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311096	Color (true)	1.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310861	Turbidity	1.29	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311104	Turbidity	3.17	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P410837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310490	Calcium	0.260	Spike	P	0 - 20
2310490	Iron	6.83	Spike	P	0 - 20
2310490	Magnesium	0.673	Spike	P	0 - 20
2310490	Potassium	1.31	Spike	P	0 - 20
2310490	Sodium	0.278	Spike	P	0 - 20
2310490	Strontium	0.680	Spike	P	0 - 20
2310490	Tin	0.709	Spike	P	0 - 20
2310490	Vanadium	0.0463	Spike	P	0 - 20
2310490	Zinc	0.504	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411149

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312474	Titanium	1.09	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P410837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310490	Aluminum	33.7	Spike	F	0 - 20
2310490	Antimony	1.95	Spike	P	0 - 20
2310490	Arsenic	0.383	Spike	P	0 - 20
2310490	Barium	0.0471	Spike	P	0 - 20
2310490	Beryllium	2.62	Spike	P	0 - 20
2310490	Boron	0.742	Spike	P	0 - 20
2310490	Cadmium	1.16	Spike	P	0 - 20
2310490	Chromium	6.10	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P410837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310490	Cobalt	0.269	Spike	P	0 - 20
2310490	Copper	0.615	Spike	P	0 - 20
2310490	Lead	0.266	Spike	P	0 - 20
2310490	Manganese	1.27	Spike	P	0 - 20
2310490	Molybdenum	3.16	Spike	P	0 - 20
2310490	Nickel	0.343	Spike	P	0 - 20
2310490	Selenium	0.619	Spike	P	0 - 20
2310490	Silver	0.946	Spike	P	0 - 20
2310490	Thallium	2.31	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P411050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310648	Chloride	0.247	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P411054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310648	Sulfate	0.252	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P410877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310662	Ammonia-N	2.56	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P411002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310528	Kjeldahl Nitrogen	10.4	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P411089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310967	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P411075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311082	Total-P	0.855	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P410981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310485	Total Alkalinity	4.61	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P411342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310966	TDS	4.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P410984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310485	Fluoride	0.483	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P411058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310730	Organic Carbon	0.438	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P411101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311473	Organic Carbon	0.783	Spike	P	0 - 20

* 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: A110815

Included Lab Sample IDs: 2310965, 2310966, 2310971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110816

Included Lab Sample IDs: 2310965, 2310966, 2310971

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110831

Included Lab Sample IDs: 2310965, 2310966, 2310971

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110840

Included Lab Sample IDs: 2310967, 2310968, 2310972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.2	95.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A110849

Included Lab Sample IDs: 2310987, 2310988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.2	97.3	P/P	90 - 110
Antimony	95.0	96.8	P/P	90 - 110
Arsenic	99.0	97.1	P/P	90 - 110
Barium	97.6	98.0	P/P	90 - 110
Beryllium	97.2	98.6	P/P	90 - 110
Boron	100	103	P/P	90 - 110
Cadmium	97.1	98.3	P/P	90 - 110
Chromium	93.9	96.1	P/P	90 - 110
Cobalt	98.2	99.6	P/P	90 - 110
Copper	94.0	93.5	P/P	90 - 110
Lead	95.9	96.8	P/P	90 - 110
Manganese	95.1	98.2	P/P	90 - 110
Molybdenum	96.6	96.9	P/P	90 - 110
Nickel	94.3	94.9	P/P	90 - 110
Selenium	97.4	96.5	P/P	90 - 110
Silver	99.1	99.3	P/P	90 - 110
Thallium	97.2	95.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110876

Included Lab Sample IDs: 2310987, 2310988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.2	97.8	P/P	90 - 110
Iron	99.1	100	P/P	90 - 110
Magnesium	98.6	99.4	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	97.0	97.4	P/P	90 - 110
Strontium	95.5	97.0	P/P	90 - 110
Tin	97.6	98.9	P/P	90 - 110
Vanadium	97.1	98.0	P/P	90 - 110
Zinc	98.8	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110877

Included Lab Sample IDs: 2310965, 2310966, 2310971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.9	94.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110877

Included Lab Sample IDs: 2310965, 2310966, 2310971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110920

Included Lab Sample IDs: 2310967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.5	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110932

Included Lab Sample IDs: 2310967, 2310968, 2310972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110934

Included Lab Sample IDs: 2310968, 2310972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	96.2	P/P	90 - 110
Organic Carbon	96.2	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110999

Included Lab Sample IDs: 2310968, 2310972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111012

Included Lab Sample IDs: 2310987, 2310988

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Titanium	95.9	97.9	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111015

Included Lab Sample IDs: 2310967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.2	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111026

Included Lab Sample IDs: 2310967, 2310972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110
Total-P	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111065

Included Lab Sample IDs: 2310968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	100	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 SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	101				1.57	
	Color (true)	102					
EPA 180.1 Rev. 2.0	Turbidity	97.2				1.29	
	Turbidity	96.7				3.17	
EPA 200.7 Rev. 4.4	Calcium	101	97.7	100			0.260
	Iron	106	110	99.6	106		6.83
	Magnesium	101	96.3	100			0.673
	Potassium	104	98.0	95.9	101		1.31
	Sodium	99.7	97.5	99.4			0.278
	Strontium	104	99.1	98.4	103		0.680
	Tin	106	98.2	97.5	98.9		0.709
	Titanium	103	99.3	104	105		1.09
	Vanadium	97.9	94.0	94.0	97.9		0.0463
	Zinc	104	96.9	98.0	100		0.504
EPA 200.8 Rev. 5.4	Aluminum	99.5	100				33.7
	Antimony	101	101	98.7	105		1.95
	Arsenic	101	103	103	104		0.383
	Barium	104	106	105	104		0.0471
	Beryllium	98.2	99.5	102	95.6		2.62
	Boron	103	108	109	108		0.742
	Cadmium	100	102	101	103		1.16
	Chromium	96.7	104	111	99.6		6.10
	Cobalt	103	101	101	103		0.269
	Copper	95.9	94.0	94.7	92.9		0.615
	Lead	99.9	99.5	99.7	101		0.266
	Manganese	98.5	101	103	101		1.27
	Molybdenum	99.3	105				3.16
	Nickel	98.4	96.0	96.3	94.6		0.343
	Selenium	99.1	98.3	97.7	101		0.619
	Silver	104	102	103	103		0.946
	Thallium	95.2	98.2	100	98.0		2.31
EPA 300.0 Rev. 2.1	Chloride	102	95.8	103		0.247	
	Sulfate	102	98.2	99.8		0.252	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	94.2	96.8			2.56
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	106	94.6			10.4
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.5	99.0			0.504
EPA 365.1 Rev. 2.0	Total-P	101	104	104			0.855
SM 2320 B-2011	Total Alkalinity	98.8				4.61	
SM 2540 C-2011	TDS					4.17	
SM 4500 F-C-2011	Fluoride	99.2					0.483
SM 5310 B-2011	Organic Carbon	97.8	102				0.438
	Organic Carbon	91.8	99.6	98.2			0.783

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2310965, 2310966, 2310971
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2310965, 2310966, 2310971
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2310987, 2310988
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2310987, 2310988
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2310965, 2310966, 2310971

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2310965, 2310966, 2310971
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2310967, 2310968, 2310972
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2310967, 2310968, 2310972
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2310967, 2310968, 2310972
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2310967, 2310968, 2310972
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2310965, 2310966, 2310971
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2310987, 2310988
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2310965, 2310966, 2310971
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2310965, 2310966, 2310971
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2310965, 2310966, 2310971
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2310967, 2310968, 2310972

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	03/08/2022			03/08/2022 16:34	Samantha L Bates	2310966, 2310971
	03/08/2022			03/08/2022 16:57	Samantha L Bates	2310965
	03/08/2022			03/08/2022 15:52	Khloe J Berg	2310965
EPA 180.1 Rev. 2.0	03/08/2022			03/08/2022 16:09	Khloe J Berg	2310966
	03/08/2022			03/08/2022 16:12	Khloe J Berg	2310971
	03/08/2022	03/09/2022 10:42	Megan Whitefoot	03/10/2022 17:29	Josef B Mick	2310987
EPA 200.7 Rev. 4.4	03/08/2022	03/09/2022 10:42	Megan Whitefoot	03/10/2022 17:37	Josef B Mick	2310988
	03/08/2022	03/16/2022 11:24	Emily M Philpot	03/17/2022 15:28	Josef B Mick	2310987
	03/08/2022	03/16/2022 11:24	Emily M Philpot	03/17/2022 15:35	Josef B Mick	2310988
EPA 200.8 Rev. 5.4	03/08/2022	03/09/2022 10:42	Megan Whitefoot	03/09/2022 20:27	Emily M Philpot	2310987
	03/08/2022	03/09/2022 10:42	Megan Whitefoot	03/09/2022 20:36	Emily M Philpot	2310988
	03/08/2022			03/11/2022 22:12	Anna M. Plaviak	2310971
EPA 300.0 Rev. 2.1	03/08/2022			03/12/2022 01:01	Anna M. Plaviak	2310965
	03/08/2022			03/12/2022 01:14	Anna M. Plaviak	2310966
	03/08/2022			03/09/2022 12:05	Judith K. Clark	2310967
EPA 350.1 Rev. 2.0	03/08/2022			03/09/2022 12:06	Judith K. Clark	2310968
	03/08/2022			03/09/2022 12:08	Judith K. Clark	2310972
	03/08/2022	03/15/2022 17:10	Samantha L Bates	03/17/2022 14:02	Alexandra J Mattheus	2310968
EPA 351.2 Rev. 2.0	03/08/2022	03/15/2022 17:10	Samantha L Bates	03/17/2022 14:04	Alexandra J Mattheus	2310972
	03/08/2022	03/15/2022 17:10	Samantha L Bates	03/17/2022 16:04	Alexandra J Mattheus	2310967
EPA 353.2 Rev. 2.0	03/08/2022			03/15/2022 09:05	Beverly Y. Sanders	2310967
	03/08/2022			03/15/2022 09:16	Beverly Y. Sanders	2310968
	03/08/2022			03/15/2022 10:21	Beverly Y. Sanders	2310972
EPA 365.1 Rev. 2.0	03/08/2022	03/16/2022 16:45	Simonne.V. Calhoun	03/17/2022 18:33	Sarah A Nixon	2310967
	03/08/2022	03/16/2022 16:45	Simonne.V. Calhoun	03/17/2022 18:38	Sarah A Nixon	2310972
	03/08/2022	03/16/2022 16:45	Simonne.V. Calhoun	03/18/2022 11:00	James L Waggeberby	2310968
SM 2320 B-2011	03/08/2022			03/10/2022 03:09	Dale L. Simmons	2310965
	03/08/2022			03/10/2022 03:23	Dale L. Simmons	2310966
	03/08/2022			03/10/2022 03:37	Dale L. Simmons	2310971
SM 2340B	03/08/2022			03/10/2022 17:29	Josef B Mick	2310987
	03/08/2022			03/10/2022 17:37	Josef B Mick	2310988
	03/08/2022			03/09/2022 14:26	Yijie Li	2310965, 2310966, 2310971
SM 2540 C-2011	03/08/2022			03/09/2022 14:26	Yijie Li	2310965, 2310966, 2310971
SM 4500 F-C-2011	03/08/2022			03/10/2022 03:09	Dale L. Simmons	2310965
	03/08/2022			03/10/2022 03:23	Dale L. Simmons	2310966
	03/08/2022			03/10/2022 03:37	Dale L. Simmons	2310971
SM 5310 B-2011	03/08/2022			03/11/2022 06:25	Khloe J Berg	2310967
	03/08/2022			03/14/2022 17:43	Khloe J Berg	2310968
	03/08/2022			03/14/2022 18:48	Khloe J Berg	2310972