Chemical Analysis Report

NW-DIST-2022-09-21-05

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

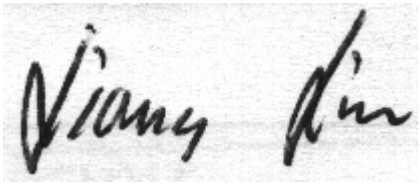
Event Description: **Misc Run**
Request ID: **RQ-2022-09-19-28**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Goverment Street
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

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: Liang Lin, Environmental Administrator

Date Certified: 13-OCT-2022 09:32



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: Beaver Pond Creek **Collection Date/Time: 09/20/2022 10:10**

Field ID: 33010066 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358296	DEP SOP: NU-094-1	Color (true)	60	A	PCU	P419925	
	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P419959	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P420257	
		Sulfate	2.1		mg SO4/L	P420261	
	SM 2320 B-2011	Total Alkalinity	48		mg CaCO3/L	P420379	
	SM 2540 C-2011	TDS	90		mg/L	P420436	
	SM 2540 D-2011	TSS	6	I	mg/L	P420390	
	SM 4500-F- C-2011	Fluoride	0.059	I	mg F/L	P420383	
2358297	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P420418	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P420124	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P420316	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P420227	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P420121	
2358309	EPA 200.7 Rev. 4.4	Calcium	15.1		mg/L	P420018	
		Iron	3.39E+03		ug/L	P420018	
		Magnesium	2.54		mg/L	P420018	
		Potassium	2.7		mg/L	P420018	
		Sodium	7.9		mg/L	P420548	
		Strontium	40.3		ug/L	P420018	
		Tin	3.0	U	ug/L	P420018	
		Titanium	1.1	I	ug/L	P420018	
		Vanadium	2.0	U	ug/L	P420018	
		Zinc	5.0	U	ug/L	P420018	
	EPA 200.8 Rev. 5.4	Aluminum	113		ug/L	P420018	
		Antimony	0.051	I	ug/L	P420018	
		Arsenic	1.36		ug/L	P420018	
		Barium	18.6		ug/L	P420018	
		Beryllium	0.016	I	ug/L	P420018	
		Boron	55.1		ug/L	P420018	
		Cadmium	0.020	U	ug/L	P420018	
		Chromium	0.52	I	ug/L	P420018	
		Cobalt	0.305		ug/L	P420018	
		Copper	0.43	I	ug/L	P420372	
		Lead	0.25	I	ug/L	P420018	
		Manganese	134		ug/L	P420018	
		Molybdenum	0.15	U	ug/L	P420018	
		Nickel	0.55	I	ug/L	P420018	
		Selenium	0.20	U	ug/L	P420018	
		Silver	0.010	U	ug/L	P420018	
		Thallium	0.10	U	ug/L	P420018	
	SM 2340 B-2011	Hardness	48.2		mg/L	P420018	

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: Collins Mill Creek upstream of Conecuh Street **Collection Date/Time: 09/20/2022 11:20**

Field ID: G4NW0507 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358292	DEP SOP: NU-094-1	Color (true)	11	A	PCU	P419923	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P419959	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P420257	
		Sulfate	1.6		mg SO4/L	P420261	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P420379	
	SM 2540 C-2011	TDS	30		mg/L	P420436	
	SM 2540 D-2011	TSS	2	I	mg/L	P420390	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420383	
2358293	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P420512	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P420125	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P420315	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P420227	
	SM 5310 B-2011	Organic Carbon	1.7		mg C/L	P420121	

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: Williams Creek upstream of Hwy 98 **Collection Date/Time: 09/20/2022 12:40**

Field ID: G4NW0531 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2358294	DEP SOP: NU-094-1	Color (true)	80		PCU	P419923	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P419959	
	EPA 300.0 Rev. 2.1	Chloride	390		mg Cl/L	P420257	
		Sulfate	58		mg SO4/L	P420261	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P420379	
	SM 2540 C-2011	TDS	688		mg/L	P420436	
	SM 2540 D-2011	TSS	3	I	mg/L	P420390	
	SM 4500-F- C-2011	Fluoride	0.043	I	mg F/L	P420383	
2358295	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P420418	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P420126	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P420315	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P420227	
	SM 5310 B-2011	Organic Carbon	8.6		mg C/L	P420121	
2358308	EPA 200.7 Rev. 4.4	Calcium	11.6		mg/L	P420018	
		Iron	670		ug/L	P420018	
		Magnesium	23.5		mg/L	P420018	
		Potassium	9.1		mg/L	P420018	
		Sodium	199		mg/L	P420548	
		Strontium	155		ug/L	P420018	
		Tin	3.0	U	ug/L	P420018	
		Titanium	2.1	I	ug/L	P420018	
		Vanadium	2.0	U	ug/L	P420018	
		Zinc	5.0	U	ug/L	P420018	
	EPA 200.8 Rev. 5.4	Aluminum	346		ug/L	P420018	
		Antimony	0.078	I	ug/L	P420018	
		Arsenic	0.86		ug/L	P420018	
		Barium	7.92		ug/L	P420018	
		Beryllium	0.018	I	ug/L	P420018	
		Boron	148		ug/L	P420018	
		Cadmium	0.020	U	ug/L	P420018	
		Chromium	0.49	I	ug/L	P420018	
		Cobalt	0.101		ug/L	P420018	
		Copper	0.54	I	ug/L	P420372	
		Lead	0.20	U	ug/L	P420018	
		Manganese	7.71		ug/L	P420018	
		Molybdenum	0.28	I	ug/L	P420018	
		Nickel	0.51	I	ug/L	P420018	
		Selenium	0.24	I	ug/L	P420018	
		Silver	0.010	U	ug/L	P420018	
		Thallium	0.10	U	ug/L	P420018	
	SM 2340 B-2011	Hardness	126		mg/L	P420018	

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: DEP SOP: NU-094-1
Batch ID: P419923

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P419925

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419959

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420018

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
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 200.7 Rev. 4.4
Batch ID: P420548

Component	Result	Code	Units
Sodium	0.50	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

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
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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Component	Result	Code	Units
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420372

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420257

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420261

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420418

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420512

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420124

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420125

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420126

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420315

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420316

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420227

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

Reference Method: SM 2320 B-2011
Batch ID: P420379

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

Reference Method: SM 2540 C-2011
Batch ID: P420436

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P420390

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420383

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P420121

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: P419923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P419925

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419959

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	108		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Strontium	104		P	85 - 115
Tin	102		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	99.9		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sodium	95.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Barium	104		P	85 - 115
Beryllium	94.2		P	85 - 115
Boron	104		P	85 - 115
Cadmium	97.8		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	100		P	85 - 115
Lead	93.8		P	85 - 115
Manganese	103		P	85 - 115
Molybdenum	97.3		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	102		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	112		P	85 - 115
Thallium	93.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	96.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420257

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420261

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420418

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420512

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420126

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420315

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420316

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: P420227

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

Reference Method: SM 2320 B-2011
Batch ID: P420379

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358253	Calcium	104		P	80 - 120
2358253	Iron	118	108	P/P	80 - 120
2358253	Magnesium	118	105	P/P	80 - 120
2358253	Potassium	112	101	P/P	80 - 120
2358253	Strontium	113	104	P/P	80 - 120
2358253	Tin	110	101	P/P	80 - 120
2358253	Titanium	115	105	P/P	80 - 120
2358253	Vanadium	113	103	P/P	80 - 120
2358253	Zinc	108	98.9	P/P	80 - 120
2358254	Calcium	104		P	80 - 120
2358254	Iron	105		P	80 - 120
2358254	Magnesium	98.9		P	80 - 120
2358254	Potassium	95.0		P	80 - 120
2358254	Strontium	101		P	80 - 120
2358254	Tin	99.3		P	80 - 120
2358254	Titanium	102		P	80 - 120
2358254	Vanadium	102		P	80 - 120
2358254	Zinc	98.6		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420548

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358129	Sodium	89.4	101	P/P	80 - 120
2358347	Sodium	97.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358253	Aluminum	103	105	P/P	80 - 120
2358253	Antimony	107	105	P/P	80 - 120
2358253	Arsenic	104	102	P/P	80 - 120
2358253	Barium	107	105	P/P	80 - 120
2358253	Beryllium	98.4	97.6	P/P	80 - 120
2358253	Boron	103	106	P/P	80 - 120
2358253	Cadmium	102	103	P/P	80 - 120
2358253	Chromium	108	107	P/P	80 - 120
2358253	Cobalt	105	104	P/P	80 - 120
2358253	Lead	99.1	97.0	P/P	80 - 120
2358253	Manganese	107	107	P/P	80 - 120
2358253	Molybdenum	103	101	P/P	80 - 120
2358253	Nickel	103	102	P/P	80 - 120
2358253	Selenium	107	104	P/P	80 - 120
2358253	Silver	114	111	P/P	80 - 120
2358253	Thallium	99.2	97.8	P/P	80 - 120
2358254	Aluminum	104		P	80 - 120
2358254	Antimony	106		P	80 - 120
2358254	Arsenic	103		P	80 - 120
2358254	Barium	107		P	80 - 120
2358254	Beryllium	98.5		P	80 - 120
2358254	Boron	105		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358254	Cadmium	102		P	80 - 120
2358254	Chromium	106		P	80 - 120
2358254	Cobalt	104		P	80 - 120
2358254	Lead	97.7		P	80 - 120
2358254	Manganese	107		P	80 - 120
2358254	Molybdenum	99.2		P	80 - 120
2358254	Nickel	102		P	80 - 120
2358254	Selenium	103		P	80 - 120
2358254	Silver	111		P	80 - 120
2358254	Thallium	97.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358208	Copper	101		P	80 - 120
2359911	Copper	98.1	99.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358092	Chloride	99.5		P	90 - 110
2358237	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358092	Sulfate	96.5		P	90 - 110
2358237	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358239	Ammonia-N	96.2	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358485	Ammonia-N	98.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357832	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357817	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357834	Kjeldahl Nitrogen	96.6	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358107	NO2NO3-N	92.4	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358200	NO2NO3-N	92.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358382	Total-P	107	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P420383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358674	Fluoride	100	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358295	Organic Carbon	98.4	99.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358292	Color (true)	2.61	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P419925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358296	Color (true)	1.27	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358122	Turbidity	8.64	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358253	Calcium	7.19	Spike	P	0 - 20
2358253	Iron	9.10	Spike	P	0 - 20
2358253	Magnesium	8.74	Spike	P	0 - 20
2358253	Potassium	7.33	Spike	P	0 - 20
2358253	Strontium	7.85	Spike	P	0 - 20
2358253	Tin	8.67	Spike	P	0 - 20
2358253	Titanium	8.77	Spike	P	0 - 20
2358253	Vanadium	8.66	Spike	P	0 - 20
2358253	Zinc	9.04	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P420548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358129	Sodium	12.2	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358253	Aluminum	1.27	Spike	P	0 - 20
2358253	Antimony	2.44	Spike	P	0 - 20
2358253	Arsenic	1.50	Spike	P	0 - 20
2358253	Barium	2.18	Spike	P	0 - 20
2358253	Beryllium	0.817	Spike	P	0 - 20
2358253	Boron	2.78	Spike	P	0 - 20
2358253	Cadmium	1.04	Spike	P	0 - 20
2358253	Chromium	0.255	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358253	Cobalt	0.917	Spike	P	0 - 20
2358253	Lead	2.13	Spike	P	0 - 20
2358253	Manganese	0.242	Spike	P	0 - 20
2358253	Molybdenum	2.52	Spike	P	0 - 20
2358253	Nickel	1.82	Spike	P	0 - 20
2358253	Selenium	2.87	Spike	P	0 - 20
2358253	Silver	2.24	Spike	P	0 - 20
2358253	Thallium	1.43	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359911	Copper	1.01	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358092	Chloride	0.893	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358092	Sulfate	1.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358239	Ammonia-N	0.183	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358485	Ammonia-N	1.01	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357832	Kjeldahl Nitrogen	1.97	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357817	Kjeldahl Nitrogen	1.73	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357834	Kjeldahl Nitrogen	2.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358107	NO2NO3-N	10.3	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358200	NO2NO3-N	7.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358382	Total-P	1.09	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P420379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358674	Total Alkalinity	1.87	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P420436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358278	TDS	4.62	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P420383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358674	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P420121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358295	Organic Carbon	0.811	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: A114859
Included Lab Sample IDs: 2358292, 2358294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1
Run ID: A114860
Included Lab Sample IDs: 2358296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A114874
Included Lab Sample IDs: 2358292, 2358294, 2358296

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

Reference Method: SM 5310 B-2011
Run ID: A114944
Included Lab Sample IDs: 2358293, 2358295, 2358297

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114999
Included Lab Sample IDs: 2358292, 2358294, 2358296

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A115010
Included Lab Sample IDs: 2358308, 2358309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	107	P/P	90 - 110
Antimony	102	102	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Barium	102	103	P/P	90 - 110
Beryllium	98.6	97.6	P/P	90 - 110
Boron	101	104	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Cobalt	102	101	P/P	90 - 110
Lead	95.0	95.8	P/P	90 - 110
Manganese	105	105	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	102	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A115010
Included Lab Sample IDs: 2358308, 2358309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	101	101	P/P	90 - 110
Thallium	95.6	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115011
Included Lab Sample IDs: 2358295

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115018
Included Lab Sample IDs: 2358295

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115024
Included Lab Sample IDs: 2358293, 2358297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115032
Included Lab Sample IDs: 2358293, 2358295, 2358297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.0	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A115060
Included Lab Sample IDs: 2358308, 2358309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	104	P/P	90 - 110
Iron	105	103	P/P	90 - 110
Magnesium	103	101	P/P	90 - 110
Potassium	101	99.8	P/P	90 - 110
Strontium	99.1	94.1	P/P	90 - 110
Tin	98.4	93.2	P/P	90 - 110
Titanium	98.6	93.3	P/P	90 - 110
Vanadium	98.2	93.5	P/P	90 - 110
Zinc	97.5	93.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A115070
Included Lab Sample IDs: 2358292, 2358294, 2358296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.5	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115070
Included Lab Sample IDs: 2358292, 2358294, 2358296

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115092
Included Lab Sample IDs: 2358293, 2358297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110
Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115096
Included Lab Sample IDs: 2358295, 2358297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A115099
Included Lab Sample IDs: 2358308, 2358309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.4	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115139
Included Lab Sample IDs: 2358293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	98.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A115175
Included Lab Sample IDs: 2358308, 2358309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	98.3	98.2	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)	102					2.61	
	Color (true)	101					1.27	
EPA 180.1 Rev. 2.0	Turbidity	101					8.64	
EPA 200.7 Rev. 4.4	Calcium	104	104	104				7.19
	Iron	108	118	108	105			9.10
	Magnesium	105	118	105	98.9			8.74
	Potassium	101	112	101	95.0			7.33
	Sodium	95.9	89.4	101	97.0			12.2
	Strontium	104	113	104	101			7.85
	Tin	102	110	101	99.3			8.67
	Titanium	104	115	105	102			8.77
	Vanadium	102	113	103	102			8.66
	Zinc	99.9	108	98.9	98.6			9.04
EPA 200.8 Rev. 5.4	Aluminum	100	103	105	104			1.27
	Antimony	101	107	105	106			2.44
	Arsenic	100	104	102	103			1.50
	Barium	104	107	105	107			2.18
	Beryllium	94.2	98.4	97.6	98.5			0.817
	Boron	104	106	105	103			2.78
	Cadmium	97.8	102	103	102			1.04
	Chromium	101	108	107	106			0.255
	Cobalt	100	105	104	104			0.917
	Copper	96.8	101	98.1	99.1			1.01
	Lead	93.8	99.1	97.0	97.7			2.13
	Manganese	103	107	107	107			0.242
	Molybdenum	97.3	103	101	99.2			2.52
	Nickel	99.9	103	102	102			1.82
	Selenium	102	107	104	103			2.87
	Silver	112	114	111	111			2.24
	Thallium	93.3	99.2	97.8	97.3			1.43
EPA 300.0 Rev. 2.1	Chloride	102	99.5	100			0.893	
	Sulfate	101	96.5	99.0			1.09	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.2	96.0				0.183
	Ammonia-N	99.8	98.4	99.6				1.01
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	105	107				1.97
	Kjeldahl Nitrogen	98.8	104	102				1.73
	Kjeldahl Nitrogen	103	96.6	99.4				2.27
EPA 353.2 Rev. 2.0	NO2NO3-N	102	92.4	107				10.3
	NO2NO3-N	101	92.5	100				7.34
EPA 365.1 Rev. 2.0	Total-P	103	107	105				1.09
SM 2320 B-2011	Total Alkalinity	98.6					1.87	
SM 2540 C-2011	TDS						4.62	
SM 4500-F- C-2011	Fluoride	102	100	100				0.0
SM 5310 B-2011	Organic Carbon	97.0	98.4	99.6				0.811

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2358292, 2358294, 2358296
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2358292, 2358294, 2358296
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2358308, 2358309

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	2358308, 2358309
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2358292, 2358294, 2358296
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2358292, 2358294, 2358296
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2358293, 2358295, 2358297
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2358293, 2358295, 2358297
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2358293, 2358295, 2358297
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2358293, 2358295, 2358297
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2358292, 2358294, 2358296
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2358308, 2358309
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2358292, 2358294, 2358296
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2358292, 2358294, 2358296
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2358292, 2358294, 2358296
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2358293, 2358295, 2358297

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	09/21/2022			09/21/2022 14:55	Samantha L Bates	2358292, 2358294
	09/21/2022			09/21/2022 15:24	Samantha L Bates	2358296
EPA 180.1 Rev. 2.0	09/21/2022			09/21/2022 14:42	Chandler E Cox	2358292
	09/21/2022			09/21/2022 14:45	Chandler E Cox	2358294
	09/21/2022			09/21/2022 14:47	Chandler E Cox	2358296
EPA 200.7 Rev. 4.4	09/21/2022	09/23/2022 10:20	Megan Whitefoot	09/30/2022 17:56	McKinley C Carter	2358308
	09/21/2022	09/23/2022 10:20	Megan Whitefoot	09/30/2022 18:03	McKinley C Carter	2358309
	09/21/2022	10/06/2022 10:05	Megan Whitefoot	10/06/2022 20:14	McKinley C Carter	2358308
	09/21/2022	10/06/2022 10:05	Megan Whitefoot	10/06/2022 20:22	McKinley C Carter	2358309
EPA 200.8 Rev. 5.4	09/21/2022	09/23/2022 10:20	Megan Whitefoot	09/27/2022 17:42	Emily M Philpot	2358308
	09/21/2022	09/23/2022 10:20	Megan Whitefoot	09/27/2022 17:51	Emily M Philpot	2358309
	09/21/2022	10/03/2022 09:55	Megan Whitefoot	10/03/2022 19:58	Emily M Philpot	2358308
	09/21/2022	10/03/2022 09:55	Megan Whitefoot	10/03/2022 20:07	Emily M Philpot	2358309
EPA 300.0 Rev. 2.1	09/21/2022			09/28/2022 07:48	Anna M. Plaviak	2358292
	09/21/2022			09/28/2022 08:03	Anna M. Plaviak	2358294
	09/21/2022			09/28/2022 08:18	Anna M. Plaviak	2358296
EPA 350.1 Rev. 2.0	09/21/2022			10/03/2022 13:46	Ping Hua	2358295
	09/21/2022			10/03/2022 13:47	Ping Hua	2358297
	09/21/2022			10/05/2022 11:16	Ping Hua	2358293
EPA 351.2 Rev. 2.0	09/21/2022	09/27/2022 14:11	Samantha L Bates	09/28/2022 13:38	Samantha L Bates	2358295
	09/21/2022	09/27/2022 14:11	Samantha L Bates	10/03/2022 13:30	Samantha L Bates	2358297
	09/21/2022	09/27/2022 14:11	Samantha L Bates	10/03/2022 13:59	Samantha L Bates	2358293
EPA 353.2 Rev. 2.0	09/21/2022			09/29/2022 12:46	Judith K. Clark	2358293
	09/21/2022			09/29/2022 12:48	Judith K. Clark	2358295
	09/21/2022			09/29/2022 13:04	Judith K. Clark	2358297
EPA 365.1 Rev. 2.0	09/21/2022	09/28/2022 14:15	Simonne.V. Calhoun	09/29/2022 09:35	James L Waggerby	2358295
	09/21/2022	09/28/2022 14:15	Simonne.V. Calhoun	09/29/2022 11:32	James L Waggerby	2358293
	09/21/2022	09/28/2022 14:15	Simonne.V. Calhoun	09/29/2022 11:33	James L Waggerby	2358297
SM 2320 B-2011	09/21/2022			10/01/2022 13:15	Dale L. Simmons	2358292
	09/21/2022			10/01/2022 13:27	Dale L. Simmons	2358294
	09/21/2022			10/01/2022 13:38	Dale L. Simmons	2358296
SM 2340 B-2011	09/21/2022			09/30/2022 17:56	McKinley C Carter	2358308
	09/21/2022			09/30/2022 18:03	McKinley C Carter	2358309
SM 2540 C-2011	09/21/2022			09/26/2022 15:56	Yijie Li	2358292, 2358294, 2358296
SM 2540 D-2011	09/21/2022			09/26/2022 15:56	Yijie Li	2358292, 2358294, 2358296
SM 4500-F- C-2011	09/21/2022			10/01/2022 13:15	Dale L. Simmons	2358292
	09/21/2022			10/01/2022 13:27	Dale L. Simmons	2358294
	09/21/2022			10/01/2022 13:38	Dale L. Simmons	2358296
SM 5310 B-2011	09/21/2022			09/24/2022 03:05	Khloe J Berg	2358295
	09/21/2022			09/24/2022 07:23	Khloe J Berg	2358293

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	09/21/2022			09/24/2022 07:36	Khloe J Berg	2358297