

Chemical Analysis Report

SE-DIST-2023-06-20-01

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

Event Description: **Highlands Canoe Run**
Request ID: **RQ-2023-05-08-17**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Colin Wright, Program Administrator

Date Certified: 05-JUL-2023 10:53

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Little Lake Jackson near Center

Collection Date/Time: 06/19/2023 14:00

Field ID: G4SE0166

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418359	DEP SOP: NU-094-1	Color (true)	19		PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P431684	
		Sulfate	14		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	78		mg/L	P431841	
	SM 2540 D-2015	TSS	2	I	mg/L	P431775	
	SM 4500-F- C-2011	Fluoride	0.086	I	mg F/L	P431773	MS
2418364	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P431817	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P431610	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Denton near Center

Collection Date/Time: 06/19/2023 14:30

Field ID: G4SE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418360	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	0.40	I	NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P431684	
		Sulfate	43		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	152		mg/L	P431841	
	SM 2540 D-2015	TSS	2	I	mg/L	P431775	
	SM 4500-F- C-2011	Fluoride	0.24		mg F/L	P431773	MS
2418365	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P431817	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.1		mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	2.1		mg C/L	P431610	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Henry near Center

Collection Date/Time: 06/19/2023 11:30

Field ID: G4SE0162

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418361	DEP SOP: NU-094-1	Color (true)	11		PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P431684	
		Sulfate	27		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	18		mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	116		mg/L	P431842	
	SM 2540 D-2015	TSS	5	I	mg/L	P431776	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P431773	MS
2418366	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P431818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P431610	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Crews Northern Section

Collection Date/Time: 06/19/2023 12:25

Field ID: G4SE0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418369	DEP SOP: NU-094-1	Color (true)	51		PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P431684	
		Sulfate	2.7		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	2.2	I	mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	60		mg/L	P431842	
	SM 2540 D-2015	TSS	6	I	mg/L	P431776	
	SM 4500-F- C-2011	Fluoride	0.043	I	mg F/L	P431773	MS
2418370	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P431818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P431708	
2418377	EPA 200.7 Rev. 4.4	Calcium	2.70		mg/L	P431578	
		Iron	60	I	ug/L	P431578	
		Magnesium	1.29		mg/L	P431578	
		Potassium	1.2	I	mg/L	P431578	
		Sodium	9.3		mg/L	P431578	
		Strontium	16.7		ug/L	P431578	
		Tin	3.0	U	ug/L	P431578	
		Titanium	0.82	I	ug/L	P431578	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P431578	
		Zinc	5.0	U	ug/L	P431578	
		Aluminum	128		ug/L	P431578	
		Antimony	0.051	I	ug/L	P431578	
		Arsenic	1.57		ug/L	P431578	
		Barium	2.23		ug/L	P431578	
		Beryllium	0.010	U	ug/L	P431578	
		Boron	33.2		ug/L	P431578	
		Cadmium	0.020	U	ug/L	P431578	
		Chromium	0.40	U	ug/L	P431578	
		Cobalt	0.020	U	ug/L	P431578	
		Copper	0.50	I	ug/L	P431578	
		Lead	0.20	U	ug/L	P431578	
		Manganese	7.23		ug/L	P431578	
		Molybdenum	0.15	U	ug/L	P431578	
		Nickel	0.50	U	ug/L	P431578	
		Selenium	0.20	U	ug/L	P431578	
		Silver	0.010	U	ug/L	P431578	
		Thallium	0.10	U	ug/L	P431578	
	SM 2340 B-2011	Hardness	12.1		mg/L	P431578	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Huckleberry Lake near Center

Collection Date/Time: 06/19/2023 13:25

Field ID: G4SE0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418362	DEP SOP: NU-094-1	Color (true)	79		PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P431684	
		Sulfate	4.2		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	90		mg/L	P431842	
	SM 2540 D-2015	TSS	4	I	mg/L	P431776	
	SM 4500-F- C-2011	Fluoride	0.089	I	mg F/L	P431773	MS
2418367	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P431818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P431610	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Buck Lake near Center

Collection Date/Time: 06/19/2023 10:45

Field ID: G4SE0167

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418363	DEP SOP: NU-094-1	Color (true)	4.0	I	PCU	P431507	
	EPA 180.1 Rev. 2.0	Turbidity	0.70	I	NTU	P431510	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P431684	
		Sulfate	56		mg SO4/L	P431687	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P431770	
	SM 2540 C-2015	TDS	178	A	mg/L	P431842	
	SM 2540 D-2015	TSS	2	UA	mg/L	P431776	
	SM 4500-F- C-2011	Fluoride	0.081	I	mg F/L	P431773	MS
2418368	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P431818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P431651	
	EPA 353.2 Rev. 2.0	NO2NO3-N	9.8		mg N/L	P431812	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P431597	
	SM 5310 B-2011	Organic Carbon	3.7		mg C/L	P431708	

Ref. Method and Comment:

SM 2540 D-2015: 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: P431507

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431510

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431578

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: P431578

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
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: P431684

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431687

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431817

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431818

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431651

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431812

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431597

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

Reference Method: SM 2320 B-2011
Batch ID: P431770

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

Reference Method: SM 2540 C-2015
Batch ID: P431841

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P431842

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P431775

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P431776

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P431773

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P431610

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

Reference Method: SM 5310 B-2011
Batch ID: P431708

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: P431507

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: P431510

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.3		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	99.5		P	85 - 115
Sodium	99.0		P	85 - 115
Strontium	97.8		P	85 - 115
Tin	99.7		P	85 - 115
Titanium	99.6		P	85 - 115
Vanadium	98.9		P	85 - 115
Zinc	98.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	99.5		P	85 - 115
Boron	107		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.9		P	85 - 115
Cobalt	99.3		P	85 - 115
Copper	99.1		P	85 - 115
Lead	94.4		P	85 - 115
Manganese	98.9		P	85 - 115
Molybdenum	99.4		P	85 - 115
Nickel	99.6		P	85 - 115
Selenium	103		P	85 - 115
Silver	103		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431684

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431687

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431817

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431818

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431651

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431812

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431597

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

Reference Method: SM 2320 B-2011
Batch ID: P431770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.1		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P431841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	93.7		P	90 - 110

Reference Method: SM 2540 C-2015
Batch ID: P431842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.7		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P431775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.8		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P431776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.2		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P431773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	105		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P431610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P431708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P431578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418286	Calcium	102		P	80 - 120
2418286	Iron	103	106	P/P	80 - 120
2418286	Magnesium	102	106	P/P	80 - 120
2418286	Potassium	98.6	103	P/P	80 - 120
2418286	Sodium	99.4	103	P/P	80 - 120
2418286	Strontium	98.2	101	P/P	80 - 120
2418286	Tin	93.1	104	P/P	80 - 120
2418286	Titanium	83.7	82.2	P/P	80 - 120
2418286	Vanadium	96.0	106	P/P	80 - 120
2418286	Zinc	95.5	104	P/P	80 - 120
2418356	Calcium	97.9		P	80 - 120
2418356	Iron	104		P	80 - 120
2418356	Magnesium	101		P	80 - 120
2418356	Potassium	97.5		P	80 - 120
2418356	Sodium	94.3		P	80 - 120
2418356	Strontium	99.3		P	80 - 120
2418356	Tin	99.7		P	80 - 120
2418356	Titanium	101		P	80 - 120
2418356	Vanadium	101		P	80 - 120
2418356	Zinc	99.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418286	Aluminum	104	106	P/P	80 - 120
2418286	Antimony	99.6	100	P/P	80 - 120
2418286	Arsenic	98.6	99.1	P/P	80 - 120
2418286	Barium	105	106	P/P	80 - 120
2418286	Beryllium	97.6	99.1	P/P	80 - 120
2418286	Boron	105	107	P/P	80 - 120
2418286	Cadmium	100	102	P/P	80 - 120
2418286	Chromium	97.2	100	P/P	80 - 120
2418286	Cobalt	96.7	98.7	P/P	80 - 120
2418286	Copper	97.0	97.4	P/P	80 - 120
2418286	Lead	93.4	95.1	P/P	80 - 120
2418286	Manganese	105	110	P/P	80 - 120
2418286	Molybdenum	98.2	99.0	P/P	80 - 120
2418286	Nickel	98.7	99.3	P/P	80 - 120
2418286	Selenium	98.2	97.5	P/P	80 - 120
2418286	Silver	101	102	P/P	80 - 120
2418286	Thallium	104	106	P/P	80 - 120
2418356	Aluminum	100		P	80 - 120
2418356	Antimony	103		P	80 - 120
2418356	Arsenic	102		P	80 - 120
2418356	Barium	103		P	80 - 120
2418356	Beryllium	100		P	80 - 120
2418356	Boron	104		P	80 - 120
2418356	Cadmium	100		P	80 - 120
2418356	Chromium	97.4		P	80 - 120
2418356	Cobalt	96.1		P	80 - 120
2418356	Copper	97.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418356	Lead	95.0		P	80 - 120
2418356	Manganese	97.3		P	80 - 120
2418356	Molybdenum	99.9		P	80 - 120
2418356	Nickel	96.2		P	80 - 120
2418356	Selenium	98.7		P	80 - 120
2418356	Silver	102		P	80 - 120
2418356	Thallium	105		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418168	Chloride	103		P	90 - 110
2418343	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418168	Sulfate	101		P	90 - 110
2418343	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418259	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418366	Ammonia-N	97.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418394	Kjeldahl Nitrogen	110	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418364	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418366	Total-P	100	98.0	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P431773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418428	Fluoride	105	107	P/F	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P431610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418093	Organic Carbon	93.6	95.7	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P431708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418854	Organic Carbon	93.1	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P431507

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418343	Color (true)	8.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431510

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418251	Turbidity	0.957	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431578

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418286	Calcium	2.97	Spike	P	0 - 20
2418286	Iron	2.31	Spike	P	0 - 20
2418286	Magnesium	2.57	Spike	P	0 - 20
2418286	Potassium	2.80	Spike	P	0 - 20
2418286	Sodium	2.28	Spike	P	0 - 20
2418286	Strontium	3.12	Spike	P	0 - 20
2418286	Tin	11.4	Spike	P	0 - 20
2418286	Titanium	1.27	Spike	P	0 - 20
2418286	Vanadium	9.48	Spike	P	0 - 20
2418286	Zinc	8.70	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431578

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418286	Aluminum	1.11	Spike	P	0 - 20
2418286	Antimony	0.838	Spike	P	0 - 20
2418286	Arsenic	0.539	Spike	P	0 - 20
2418286	Barium	1.01	Spike	P	0 - 20
2418286	Beryllium	1.42	Spike	P	0 - 20
2418286	Boron	1.49	Spike	P	0 - 20
2418286	Cadmium	1.53	Spike	P	0 - 20
2418286	Chromium	3.17	Spike	P	0 - 20
2418286	Cobalt	1.94	Spike	P	0 - 20
2418286	Copper	0.381	Spike	P	0 - 20
2418286	Lead	1.77	Spike	P	0 - 20
2418286	Manganese	1.24	Spike	P	0 - 20
2418286	Molybdenum	0.757	Spike	P	0 - 20
2418286	Nickel	0.584	Spike	P	0 - 20
2418286	Selenium	0.678	Spike	P	0 - 20
2418286	Silver	1.15	Spike	P	0 - 20
2418286	Thallium	2.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418168	Chloride	1.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418168	Sulfate	1.30	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418259	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418366	Ammonia-N	1.10	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418394	Kjeldahl Nitrogen	2.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418364	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418366	Total-P	1.93	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P431770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418428	Total Alkalinity	1.03	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P431841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418168	TDS	8.07	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P431842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418363	TDS	6.16	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P431773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418428	Fluoride	0.979	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P431610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418093	Organic Carbon	1.34	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P431708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418854	Organic Carbon	0.966	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: A119911

Included Lab Sample IDs: 2418359, 2418360, 2418361, 2418362, 2418363, 2418369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119913

Included Lab Sample IDs: 2418359, 2418360, 2418361, 2418362, 2418363, 2418369

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: A119927

Included Lab Sample IDs: 2418359, 2418360, 2418361, 2418362, 2418363, 2418369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.6	P/P	90 - 110
Sulfate	101	99.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119953

Included Lab Sample IDs: 2418364, 2418365, 2418366, 2418367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119975

Included Lab Sample IDs: 2418364, 2418365, 2418366, 2418367, 2418368, 2418370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	97.2	P/P	90 - 110
Total-P	97.2	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119986

Included Lab Sample IDs: 2418377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	104	P/P	90 - 110
Antimony	99.9	103	P/P	90 - 110
Arsenic	100	103	P/P	90 - 110
Barium	101	105	P/P	90 - 110
Beryllium	100	102	P/P	90 - 110
Boron	99.7	101	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	101	104	P/P	90 - 110
Cobalt	97.9	101	P/P	90 - 110
Copper	97.6	100	P/P	90 - 110
Lead	93.0	95.7	P/P	90 - 110
Manganese	99.3	104	P/P	90 - 110
Molybdenum	99.2	101	P/P	90 - 110
Nickel	98.7	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119986

Included Lab Sample IDs: 2418377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	99.7	103	P/P	90 - 110
Silver	101	104	P/P	90 - 110
Thallium	102	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119991

Included Lab Sample IDs: 2418368, 2418370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119997

Included Lab Sample IDs: 2418364, 2418365, 2418366, 2418367, 2418368, 2418370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.3	P/P	90 - 110
Kjeldahl Nitrogen	95.1	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A120036

Included Lab Sample IDs: 2418359, 2418360, 2418361, 2418362, 2418363, 2418369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.5	96.6	P/P	90 - 110
Total Alkalinity	96.6	94.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120036

Included Lab Sample IDs: 2418359, 2418360, 2418361, 2418362, 2418363, 2418369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	106	P/P	90 - 110
Fluoride	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120043

Included Lab Sample IDs: 2418364, 2418365, 2418366, 2418367, 2418368, 2418370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	103	104	P/P	90 - 110
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120045

Included Lab Sample IDs: 2418364, 2418365, 2418366, 2418367, 2418368, 2418370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.2	P/P	90 - 110
Ammonia-N	99.5	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A120113

Included Lab Sample IDs: 2418377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.9	97.0	P/P	90 - 110
Iron	97.3	98.8	P/P	90 - 110
Magnesium	96.4	98.0	P/P	90 - 110
Potassium	96.5	97.9	P/P	90 - 110
Sodium	93.0	93.0	P/P	90 - 110
Strontium	100	97.8	P/P	90 - 110
Tin	99.8	99.3	P/P	90 - 110
Titanium	100	99.8	P/P	90 - 110
Vanadium	99.5	99.3	P/P	90 - 110
Zinc	100	99.7	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				8.57	
EPA 180.1 Rev. 2.0	Turbidity	99.3				0.957	
EPA 200.7 Rev. 4.4	Calcium	100	102	97.9			2.97
	Iron	104	103	106	104		2.31
	Magnesium	104	102	106	101		2.57
	Potassium	99.5	98.6	103	97.5		2.80
	Sodium	99.0	99.4	103	94.3		2.28
	Strontium	97.8	98.2	101	99.3		3.12
	Tin	99.7	93.1	104	99.7		11.4
	Titanium	99.6	83.7	82.2	101		1.27
	Vanadium	98.9	96.0	106	101		9.48
	Zinc	98.8	95.5	104	99.4		8.70
EPA 200.8 Rev. 5.4	Aluminum	104	104	106	100		1.11
	Antimony	101	99.6	100	103		0.838
	Arsenic	101	98.6	99.1	102		0.539
	Barium	104	105	106	103		1.01
	Beryllium	99.5	97.6	99.1	100		1.42
	Boron	107	105	107	104		1.49
	Cadmium	101	100	102	100		1.53
	Chromium	99.9	97.2	100	97.4		3.17
	Cobalt	99.3	96.7	98.7	96.1		1.94
	Copper	99.1	97.0	97.4	97.0		0.381
	Lead	94.4	93.4	95.1	95.0		1.77
	Manganese	98.9	105	110	97.3		1.24
	Molybdenum	99.4	98.2	99.0	99.9		0.757
	Nickel	99.6	98.7	99.3	96.2		0.584
	Selenium	103	98.2	97.5	98.7		0.678
	Silver	103	101	102	102		1.15
	Thallium	102	104	106	105		2.22
EPA 300.0 Rev. 2.1	Chloride	103	103	105		1.35	
	Sulfate	101	101	100		1.30	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	100	102			1.28
	Ammonia-N	100	97.2	98.4			1.10
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	110	107			2.53
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	102	100	98.0			1.93
SM 2320 B-2011	Total Alkalinity	95.1				1.03	
SM 2540 C-2015	TDS	93.7				8.07	
	TDS	97.7				6.16	
SM 2540 D-2015	TSS	94.8					
	TSS	91.2					
SM 4500-F- C-2011	Fluoride	105	105	107			0.979
SM 5310 B-2011	Organic Carbon	94.8	93.6	95.7			1.34
	Organic Carbon	95.0	93.1	95.0			0.966

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2418359, 2418360, 2418361, 2418362, 2418363, 2418369

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2418377
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2418377
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2418364, 2418365, 2418366, 2418367, 2418368, 2418370
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2418364, 2418365, 2418366, 2418367, 2418368, 2418370
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2418364, 2418365, 2418366, 2418367, 2418368, 2418370
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2418364, 2418365, 2418366, 2418367, 2418368, 2418370
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2418377
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2418364, 2418365, 2418366, 2418367, 2418368, 2418370

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	06/20/2023			06/20/2023 13:15	Chandler E Cox	2418359
	06/20/2023			06/20/2023 13:16	Chandler E Cox	2418360
	06/20/2023			06/20/2023 13:17	Chandler E Cox	2418361, 2418362
	06/20/2023			06/20/2023 13:18	Chandler E Cox	2418363
	06/20/2023			06/20/2023 13:19	Chandler E Cox	2418369
EPA 180.1 Rev. 2.0	06/20/2023			06/20/2023 12:39	Alexis Price	2418359
	06/20/2023			06/20/2023 12:42	Alexis Price	2418360
	06/20/2023			06/20/2023 12:43	Alexis Price	2418361, 2418362
	06/20/2023			06/20/2023 12:44	Alexis Price	2418363
	06/20/2023			06/20/2023 12:45	Alexis Price	2418369
EPA 200.7 Rev. 4.4	06/20/2023	06/21/2023 12:20	George D Taylor	06/29/2023 19:13	Samatha Luckman	2418377
EPA 200.8 Rev. 5.4	06/20/2023	06/21/2023 12:20	George D Taylor	06/22/2023 18:15	Emily M Philpot	2418377
EPA 300.0 Rev. 2.1	06/20/2023			06/22/2023 07:49	James L Waggeberby	2418359
	06/20/2023			06/22/2023 08:04	James L Waggeberby	2418360
	06/20/2023			06/22/2023 08:20	James L Waggeberby	2418361
	06/20/2023			06/22/2023 08:35	James L Waggeberby	2418362
	06/20/2023			06/22/2023 08:50	James L Waggeberby	2418363
EPA 350.1 Rev. 2.0	06/20/2023			06/22/2023 09:05	James L Waggeberby	2418369
	06/20/2023			06/27/2023 11:09	Khloe J Berg	2418364
	06/20/2023			06/27/2023 11:11	Khloe J Berg	2418365
	06/20/2023			06/27/2023 11:23	Khloe J Berg	2418366
	06/20/2023			06/27/2023 11:27	Khloe J Berg	2418367
EPA 351.2 Rev. 2.0	06/20/2023			06/27/2023 11:28	Khloe J Berg	2418368
	06/20/2023			06/27/2023 11:29	Khloe J Berg	2418370
	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:16	Ping Hua	2418364
	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:18	Ping Hua	2418365
	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:19	Ping Hua	2418366
EPA 353.2 Rev. 2.0	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:21	Ping Hua	2418367
	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:22	Ping Hua	2418368
	06/20/2023	06/22/2023 12:16	Dana G. Hughes	06/23/2023 12:27	Ping Hua	2418370
	06/20/2023			06/27/2023 10:07	Beverly Y. Sanders	2418364
	06/20/2023			06/27/2023 10:16	Beverly Y. Sanders	2418367
EPA 365.1 Rev. 2.0	06/20/2023			06/27/2023 11:51	Beverly Y. Sanders	2418365
	06/20/2023			06/27/2023 11:52	Beverly Y. Sanders	2418366
	06/20/2023			06/27/2023 11:57	Beverly Y. Sanders	2418368
	06/20/2023			06/27/2023 11:58	Beverly Y. Sanders	2418370
	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:03	Simonne.V. Calhoun	2418366
	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:04	Simonne.V. Calhoun	2418364
	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:12	Simonne.V. Calhoun	2418365
	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:13	Simonne.V. Calhoun	2418367

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:14	Simonne.V. Calhoun	2418368
	06/20/2023	06/21/2023 14:57	Adam P Silver	06/22/2023 14:15	Simonne.V. Calhoun	2418370
SM 2320 B-2011	06/20/2023			06/24/2023 01:16	Dale L. Simmons	2418359
	06/20/2023			06/24/2023 01:29	Dale L. Simmons	2418360
	06/20/2023			06/24/2023 01:42	Dale L. Simmons	2418361
	06/20/2023			06/24/2023 02:28	Dale L. Simmons	2418362
	06/20/2023			06/24/2023 02:40	Dale L. Simmons	2418363
	06/20/2023			06/24/2023 02:51	Dale L. Simmons	2418369
SM 2340 B-2011	06/20/2023			06/29/2023 19:13	Samatha Luckman	2418377
SM 2540 C-2015	06/20/2023			06/21/2023 15:02	Yijie Li	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 2540 D-2015	06/20/2023			06/21/2023 15:02	Yijie Li	2418359, 2418360, 2418361, 2418362, 2418363, 2418369
SM 4500-F- C-2011	06/20/2023			06/24/2023 01:16	Dale L. Simmons	2418359
	06/20/2023			06/24/2023 01:29	Dale L. Simmons	2418360
	06/20/2023			06/24/2023 01:42	Dale L. Simmons	2418361
	06/20/2023			06/24/2023 02:28	Dale L. Simmons	2418362
	06/20/2023			06/24/2023 02:40	Dale L. Simmons	2418363
	06/20/2023			06/24/2023 02:51	Dale L. Simmons	2418369
SM 5310 B-2011	06/20/2023			06/21/2023 21:25	Elise M. Gillis	2418364
	06/20/2023			06/21/2023 21:38	Elise M. Gillis	2418365
	06/20/2023			06/21/2023 21:52	Elise M. Gillis	2418366
	06/20/2023			06/21/2023 22:08	Elise M. Gillis	2418367
	06/20/2023			06/22/2023 16:45	Khloe J Berg	2418368
	06/20/2023			06/22/2023 16:58	Khloe J Berg	2418370