

Chemical Analysis Report

SO-DIST-2021-05-12-01

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

Event Description: **2021 SMP : Smol Highlands**
Request ID: **RQ-2021-05-10-53**
Customer: **SO-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-MAY-2021 13:09

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Lake Damon @ Middle

Collection Date/Time: 05/11/2021 10:20

Field ID: G4SD0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246888	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P398098	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P398646	
		Sulfate	38		mg SO4/L	P398649	
	SM 2120 B-2011	Color (true)	10		PCU	P398101	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	119		mg/L	P398440	
	SM 2540 D-2011	TSS	2	I	mg/L	P398333	
	SM 4500 F-C-2011	Fluoride	0.094	I	mg F/L	P398697	
2246892	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P398431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P398421	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398197	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P398447	
	SM 5310 B-2011	Organic Carbon	4.4		mg C/L	P398269	
2246896	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P398082	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Damon @ Middle

Collection Date/Time: 05/11/2021 10:20

Field ID: G4SD0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246910	EPA 200.7 Rev. 4.4	Barium	19.2		ug/L	P398413	
		Calcium	12.7		mg/L	P398413	
		Iron	30	U	ug/L	P398413	
		Magnesium	7.68		mg/L	P398413	
		Manganese	3.1	I	ug/L	P398413	
		Potassium	9.5		mg/L	P398413	
		Sodium	5.7		mg/L	P398413	
		Zinc	5.0	U	ug/L	P398413	
	EPA 200.8 Rev. 5.4	Aluminum	36		ug/L	P398413	
		Antimony	0.12	I	ug/L	P398413	
		Arsenic	0.86		ug/L	P398413	
		Beryllium	0.010	U	ug/L	P398413	
		Boron**	50.3		ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	0.40	U	ug/L	P398413	
		Copper	0.51	I	ug/L	P398413	
		Lead	0.20	U	ug/L	P398413	
		Nickel	0.50	U	ug/L	P398413	
		Selenium	0.20	U	ug/L	P398413	
		Silver	0.010	U	ug/L	P398413	
		Thallium	0.10	U	ug/L	P398413	
	SM 2340B	Hardness	63.4		mg/L	P398413	

Sample Location: Little Bonnet Lake @ Middle

Collection Date/Time: 05/11/2021 11:25

Field ID: G4SD0169

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246889	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P398098	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P398646	
		Sulfate	35		mg SO4/L	P398649	
	SM 2120 B-2011	Color (true)	12		PCU	P398102	
	SM 2320 B-2011	Total Alkalinity	35	A	mg CaCO3/L	P398479	
	SM 2540 C-2011	TDS	172		mg/L	P398440	
	SM 2540 D-2011	TSS	8	I	mg/L	P398333	
	SM 4500 F-C-2011	Fluoride	0.063	I	mg F/L	P398697	
2246893	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P398431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P398421	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398197	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P398447	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P398269	
2246897	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P398082	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Denton

Collection Date/Time: 05/11/2021 12:10

Field ID: G4SD0180

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246890	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P398098	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P398646	
		Sulfate	42	A	mg SO4/L	P398649	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P398102	
	SM 2320 B-2011	Total Alkalinity	38	A	mg CaCO3/L	P398525	
	SM 2540 C-2011	TDS	167		mg/L	P398440	
	SM 2540 D-2011	TSS	2	U	mg/L	P398333	
	SM 4500 F-C-2011	Fluoride	0.22		mg F/L	P398528	
2246894	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P398431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P398421	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.1		mg N/L	P398197	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P398450	
	SM 5310 B-2011	Organic Carbon	1.7		mg C/L	P398269	
2246898	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P398082	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Apthorpe

Collection Date/Time: 05/11/2021 13:20

Field ID: G4SD0185

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246891	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P398098	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P398646	
		Sulfate	31		mg SO4/L	P398649	
	SM 2120 B-2011	Color (true)	21		PCU	P398102	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P398525	
	SM 2540 C-2011	TDS	120	A	mg/L	P398441	
	SM 2540 D-2011	TSS	3	IA	mg/L	P398334	
	SM 4500 F-C-2011	Fluoride	0.038	I	mg F/L	P398528	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P398431	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P398278	
2246895	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P398197	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P398450	
	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P398269	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P398082	
	dissolved						

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398098

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398413

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398413

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398431

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398278

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398421

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398197

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398447

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398450

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398082

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

Reference Method: SM 2120 B-2011
Batch ID: P398101

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P398102

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P398477

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P398479

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

Reference Method: SM 2320 B-2011
Batch ID: P398525

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

Reference Method: SM 2540 C-2011
Batch ID: P398440

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P398441

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P398333

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P398334

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P398269

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P398413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	111		P	85 - 115
Iron	104		P	85 - 115
Magnesium	108		P	85 - 115
Manganese	102		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P398413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	80 - 120
Antimony	102		P	85 - 115
Arsenic	104		P	80 - 120
Beryllium	98.9		P	80 - 120
Boron	98.9		P	80 - 120
Cadmium	105		P	80 - 120
Chromium	104		P	80 - 120
Copper	104		P	80 - 120
Lead	95.7		P	85 - 115
Nickel	104		P	80 - 120
Selenium	103		P	80 - 120
Silver	103		P	80 - 120
Thallium	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398278

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398421

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398197

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: P398447

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398450

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P398101

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

Reference Method: SM 2120 B-2011
Batch ID: P398102

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

Reference Method: SM 2320 B-2011
Batch ID: P398477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P398479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.5		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P398525

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

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P398269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246910	Barium	106	106	P/P	80 - 120
2246910	Calcium	107		P	80 - 120
2246910	Iron	114	114	P/P	80 - 120
2246910	Magnesium	104		P	80 - 120
2246910	Manganese	109	109	P/P	80 - 120
2246910	Potassium	96.5		P	80 - 120
2246910	Sodium	105		P	80 - 120
2246910	Zinc	105	106	P/P	80 - 120
2247257	Barium	104		P	80 - 120
2247257	Calcium	108		P	80 - 120
2247257	Iron	108		P	80 - 120
2247257	Magnesium	104		P	80 - 120
2247257	Manganese	105		P	80 - 120
2247257	Potassium	99.4		P	80 - 120
2247257	Sodium	106		P	80 - 120
2247257	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246910	Aluminum	98.7	98.0	P/P	80 - 120
2246910	Antimony	103	100	P/P	80 - 120
2246910	Arsenic	104	103	P/P	80 - 120
2246910	Beryllium	98.9	96.6	P/P	80 - 120
2246910	Boron	97.8	96.9	P/P	80 - 120
2246910	Cadmium	105	104	P/P	80 - 120
2246910	Chromium	103	102	P/P	80 - 120
2246910	Copper	104	103	P/P	80 - 120
2246910	Lead	95.9	94.0	P/P	80 - 120
2246910	Nickel	104	103	P/P	80 - 120
2246910	Selenium	103	101	P/P	80 - 120
2246910	Silver	103	101	P/P	80 - 120
2246910	Thallium	110	109	P/P	80 - 120
2247257	Aluminum	94.5		P	80 - 120
2247257	Antimony	98.5		P	80 - 120
2247257	Arsenic	103		P	80 - 120
2247257	Beryllium	95.4		P	80 - 120
2247257	Boron	96.1		P	80 - 120
2247257	Cadmium	104		P	80 - 120
2247257	Chromium	101		P	80 - 120
2247257	Copper	103		P	80 - 120
2247257	Lead	93.6		P	80 - 120
2247257	Nickel	104		P	80 - 120
2247257	Selenium	101		P	80 - 120
2247257	Silver	102		P	80 - 120
2247257	Thallium	109		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
---------------	-----------	---------	---------	-----------	----------------

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246525	Chloride	102		P	90 - 110
2246890	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246525	Sulfate	101		P	90 - 110
2246890	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246726	Ammonia-N	99.0	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246895	Kjeldahl Nitrogen	109	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246892	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246556	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246895	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246896	O-Phosphate-P	95.3	96.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246890	Fluoride	99.6	100	P/P	92 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246889	Fluoride	98.2	98.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P398269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246654	Organic Carbon	95.8	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P398098

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247126	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P398413

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246910	Barium	0.889	Spike	P	0 - 20
2246910	Calcium	0.273	Spike	P	0 - 20
2246910	Iron	0.00452	Spike	P	0 - 20
2246910	Magnesium	0.519	Spike	P	0 - 20
2246910	Manganese	0.256	Spike	P	0 - 20
2246910	Potassium	0.0304	Spike	P	0 - 20
2246910	Sodium	0.265	Spike	P	0 - 20
2246910	Zinc	0.940	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P398413

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246910	Aluminum	0.754	Spike	P	0 - 20
2246910	Antimony	2.13	Spike	P	0 - 20
2246910	Arsenic	1.71	Spike	P	0 - 20
2246910	Beryllium	2.43	Spike	P	0 - 20
2246910	Boron	0.625	Spike	P	0 - 20
2246910	Cadmium	1.17	Spike	P	0 - 20
2246910	Chromium	1.47	Spike	P	0 - 20
2246910	Copper	0.555	Spike	P	0 - 20
2246910	Lead	2.02	Spike	P	0 - 20
2246910	Nickel	1.65	Spike	P	0 - 20
2246910	Selenium	1.30	Spike	P	0 - 20
2246910	Silver	1.90	Spike	P	0 - 20
2246910	Thallium	1.29	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398646

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Chloride	1.82	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398649

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Sulfate	1.58	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246726	Ammonia-N	0.358	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246895	Kjeldahl Nitrogen	3.76	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246893	Kjeldahl Nitrogen	6.80	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246892	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246556	Total-P	0.651	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246895	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246896	O-Phosphate-P	0.732	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P398101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246758	Color (true)	3.32	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P398102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2247003	Color (true)	3.01	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P398477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246580	Total Alkalinity	0.470	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P398479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246889	Total Alkalinity	1.78	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P398525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Total Alkalinity	2.02	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P398440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246524	TDS	5.76	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P398441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246891	TDS	3.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P398528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246890	Fluoride	0.477	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P398697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246889	Fluoride	0.479	Spike	P	0 - 2.1

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P398269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246654	Organic Carbon	0.582	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105373

Included Lab Sample IDs: 2246896, 2246897, 2246898, 2246899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105381

Included Lab Sample IDs: 2246888, 2246889, 2246890, 2246891

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

Reference Method: SM 2120 B-2011

Run ID: A105383

Included Lab Sample IDs: 2246888, 2246889, 2246890, 2246891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	101	103	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105426

Included Lab Sample IDs: 2246892, 2246893, 2246894, 2246895

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

Reference Method: SM 5310 B-2011

Run ID: A105457

Included Lab Sample IDs: 2246892, 2246893, 2246894, 2246895

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105507

Included Lab Sample IDs: 2246895

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105529

Included Lab Sample IDs: 2246892, 2246893, 2246894, 2246895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A105548

Included Lab Sample IDs: 2246888, 2246889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A105548

Included Lab Sample IDs: 2246888, 2246889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	98.8	P/P	90 - 110
Total Alkalinity	98.8	97.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105550

Included Lab Sample IDs: 2246888, 2246889, 2246890, 2246891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	99.7	99.8	P/P	90 - 110
Sulfate	99.8	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105560

Included Lab Sample IDs: 2246892, 2246893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105563

Included Lab Sample IDs: 2246892, 2246893, 2246894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	97.8	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105564

Included Lab Sample IDs: 2246894, 2246895

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

Reference Method: SM 2320 B-2011

Run ID: A105567

Included Lab Sample IDs: 2246890, 2246891

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105567

Included Lab Sample IDs: 2246890, 2246891

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105582

Included Lab Sample IDs: 2246910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.5	104	P/P	90 - 110
Arsenic	104	105	P/P	90 - 110
Beryllium	103	103	P/P	90 - 110
Boron	97.2	100	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	100	104	P/P	90 - 110
Copper	99.9	104	P/P	90 - 110
Nickel	101	106	P/P	90 - 110
Selenium	104	104	P/P	90 - 110
Silver	99.6	102	P/P	90 - 110
Thallium	99.6	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105621

Included Lab Sample IDs: 2246910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.9	102	P/P	90 - 110
Calcium	100	102	P/P	90 - 110
Iron	101	104	P/P	90 - 110
Magnesium	100	103	P/P	90 - 110
Manganese	100	102	P/P	90 - 110
Potassium	98.0	99.7	P/P	90 - 110
Sodium	99.2	101	P/P	90 - 110
Zinc	102	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105626

Included Lab Sample IDs: 2246888, 2246889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.5	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105651

Included Lab Sample IDs: 2246910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.0	100	P/P	90 - 110
Lead	97.0	95.3	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.92	
EPA 200.7 Rev. 4.4	Barium	100	106	106	104			0.889
	Calcium	111	107	108				0.273
	Iron	104	114	114	108			0.0045
	Magnesium	108	104	104				0.519
	Manganese	102	109	109	105			0.256
	Potassium	103	96.5	99.4				0.0304
	Sodium	108	105	106				0.265
	Zinc	101	105	106	105			0.940
EPA 200.8 Rev. 5.4	Aluminum	100	98.7	98.0	94.5			0.754
	Antimony	102	103	100	98.5			2.13
	Arsenic	104	104	103	103			1.71
	Beryllium	98.9	98.9	96.6	95.4			2.43
	Boron	98.9	97.8	96.9	96.1			0.625
	Cadmium	105	105	104	104			1.17
	Chromium	104	103	102	101			1.47
	Copper	104	104	103	103			0.555
	Lead	95.7	95.9	94.0	93.6			2.02
	Nickel	104	104	103	104			1.65
	Selenium	103	103	101	101			1.30
	Silver	103	103	101	102			1.90
	Thallium	108	110	109	109			1.29
EPA 300.0 Rev. 2.1	Chloride	104	101	102			1.82	
	Sulfate	103	107	101			1.58	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	99.0	99.4				0.358
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	109	102				3.76
	Kjeldahl Nitrogen	99.6						6.80
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	105	104				0.477
EPA 365.1 Rev. 2.0	Total-P	101	102	103				0.651
	Total-P	103	103	101				1.15
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	95.3	96.0				0.732
SM 2120 B-2011	Color (true)	101					3.32	
	Color (true)	101					3.01	
SM 2320 B-2011	Total Alkalinity	98.9					0.470	
	Total Alkalinity	98.5					1.78	
	Total Alkalinity	99.3					2.02	
SM 2540 C-2011	TDS						5.76	
	TDS						3.33	
SM 4500 F-C-2011	Fluoride	100	99.6	100				0.477
	Fluoride	96.0	98.2	98.8				0.479
SM 5310 B-2011	Organic Carbon	96.0	95.8	96.4				0.582

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2246888, 2246889, 2246890, 2246891
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2246910
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2246910
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2246888, 2246889, 2246890, 2246891
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2246888, 2246889, 2246890, 2246891
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2246892, 2246893, 2246894, 2246895

Reference Method Descriptions

Method	Description	Associated Samples
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2246892, 2246893, 2246894, 2246895
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2246892, 2246893, 2246894, 2246895
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2246892, 2246893, 2246894, 2246895
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2246896, 2246897, 2246898, 2246899
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2246888, 2246889, 2246890, 2246891
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2246888, 2246889, 2246890, 2246891
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2246910
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2246888, 2246889, 2246890, 2246891
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2246888, 2246889, 2246890, 2246891
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2246888, 2246889, 2246890, 2246891
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2246892, 2246893, 2246894, 2246895

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	05/12/2021			05/12/2021 16:00	Yen Ta	2246888, 2246889, 2246890, 2246891
EPA 200.7 Rev. 4.4	05/12/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 11:40	Betina Topolski	2246910
EPA 200.8 Rev. 5.4	05/12/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 22:40	McKinley C Carter	2246910
	05/12/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 15:40	Alexander Thompson	2246910
EPA 300.0 Rev. 2.1	05/12/2021			05/21/2021 20:58	Lipi Saha	2246890
	05/12/2021			05/22/2021 00:10	Lipi Saha	2246888
	05/12/2021			05/22/2021 00:22	Lipi Saha	2246889
	05/12/2021			05/22/2021 00:34	Lipi Saha	2246891
EPA 350.1 Rev. 2.0	05/12/2021			05/19/2021 13:42	Roberta Tatti	2246892
	05/12/2021			05/19/2021 13:43	Roberta Tatti	2246893
	05/12/2021			05/19/2021 13:44	Roberta Tatti	2246894
	05/12/2021			05/19/2021 13:46	Roberta Tatti	2246895
EPA 351.2 Rev. 2.0	05/12/2021	05/17/2021 12:37	Benjamin T. Nordmann	05/18/2021 13:45	Virginia P. Brown	2246895
	05/12/2021	05/19/2021 14:12	Benjamin T. Nordmann	05/20/2021 10:32	Virginia P. Brown	2246892
	05/12/2021	05/19/2021 14:12	Benjamin T. Nordmann	05/20/2021 10:34	Virginia P. Brown	2246893
	05/12/2021	05/19/2021 14:12	Benjamin T. Nordmann	05/20/2021 10:42	Virginia P. Brown	2246894
EPA 353.2 Rev. 2.0	05/12/2021			05/14/2021 08:47	Beverly Y. Sanders	2246892
	05/12/2021			05/14/2021 08:53	Beverly Y. Sanders	2246893
	05/12/2021			05/14/2021 09:47	Beverly Y. Sanders	2246894
	05/12/2021			05/14/2021 09:48	Beverly Y. Sanders	2246895
EPA 365.1 Rev. 2.0	05/12/2021	05/19/2021 14:24	Yen Ta	05/20/2021 12:48	Shengyu Ding	2246892
	05/12/2021	05/19/2021 14:24	Yen Ta	05/20/2021 12:49	Shengyu Ding	2246893
	05/12/2021	05/19/2021 14:24	Yen Ta	05/20/2021 14:42	Shengyu Ding	2246894
	05/12/2021	05/19/2021 14:24	Yen Ta	05/20/2021 14:43	Shengyu Ding	2246895
EPA 365.1 Rev. 2.0 dissolved	05/12/2021			05/12/2021 13:32	Ping Hua	2246896
	05/12/2021			05/12/2021 13:34	Ping Hua	2246897
	05/12/2021			05/12/2021 13:35	Ping Hua	2246898
	05/12/2021			05/12/2021 13:36	Ping Hua	2246899
SM 2120 B-2011	05/12/2021			05/12/2021 16:42	Sarah A Nixon	2246888
	05/12/2021			05/12/2021 16:47	Sarah A Nixon	2246889
	05/12/2021			05/12/2021 16:48	Sarah A Nixon	2246890
	05/12/2021			05/12/2021 16:49	Sarah A Nixon	2246891
SM 2320 B-2011	05/12/2021			05/18/2021 18:15	Dale L. Simmons	2246888
	05/12/2021			05/18/2021 19:58	Dale L. Simmons	2246889
	05/12/2021			05/20/2021 01:40	Dale L. Simmons	2246890
	05/12/2021			05/20/2021 02:01	Dale L. Simmons	2246891
SM 2340B	05/12/2021			05/24/2021 11:40	Betina Topolski	2246910
SM 2540 C-2011	05/12/2021			05/14/2021 15:25	Yijie Li	2246888, 2246889, 2246890, 2246891
SM 2540 D-2011	05/12/2021			05/14/2021 15:25	Yijie Li	2246888, 2246889, 2246890, 2246891
SM 4500 F-C-2011	05/12/2021			05/20/2021 01:29	Dale L. Simmons	2246890

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	05/12/2021			05/20/2021 02:01	Dale L. Simmons	2246891
	05/12/2021			05/24/2021 19:01	Dale L. Simmons	2246889
	05/12/2021			05/24/2021 20:40	Dale L. Simmons	2246888
SM 5310 B-2011	05/12/2021			05/14/2021 20:58	Lauren Lees	2246892
	05/12/2021			05/14/2021 21:11	Lauren Lees	2246893
	05/12/2021			05/14/2021 21:23	Lauren Lees	2246894
	05/12/2021			05/14/2021 21:38	Lauren Lees	2246895