

Chemical Analysis Report

WAS-SECT-2021-05-10-01

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

Event Description: **Alligator Creek**
Request ID: **RQ-2021-05-10-04**
Customer: **WAS-SECT**
Project ID: **SMP**

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Date Certified: 27-MAY-2021 13:23



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: Minnow Creek at Lovewood Rd

Collection Date/Time: 05/10/2021 10:55

Field ID: G3WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246343	EPA 180.1 Rev. 2.0	Turbidity	20	A	NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P398645	
		Sulfate	0.30	I	mg SO4/L	P398648	
		Color (true)	41	Q	PCU	P398325	
	SM 2120 B-2011	Total Alkalinity	12		mg CaCO3/L	P398273	
	SM 2540 C-2011	TDS	44		mg/L	P398438	
	SM 2540 D-2011	TSS	15		mg/L	P398331	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398696	
2246349	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P398168	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.092		mg N/L	P398122	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P398213	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P398165	
2246355	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P398023	
2246376	EPA 200.7 Rev. 4.4	Calcium	5.30		mg/L	P398413	
		Iron	1.91E+03		ug/L	P398413	
		Magnesium	1.64		mg/L	P398413	
		Potassium	1.2		mg/L	P398413	
		Sodium	1.7	I	mg/L	P398413	
		Strontium	12.3		ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	1.2	I	ug/L	P398413	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P398413	
		Zinc	5.0	U	ug/L	P398413	
		Aluminum	175		ug/L	P398413	
		Antimony	0.050	U	ug/L	P398413	
		Arsenic	0.72		ug/L	P398413	
		Barium	16.5		ug/L	P398413	
		Beryllium	0.016	I	ug/L	P398413	
		Boron**	10.0		ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	0.40	U	ug/L	P398413	
		Cobalt	0.180		ug/L	P398413	
		Copper	0.57	I	ug/L	P398413	
		Lead	0.62		ug/L	P398413	
		Manganese	133		ug/L	P398413	
		Molybdenum	0.15	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	20.0		mg/L	P398413	

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
SM 2120 B-2011: The sample was reanalyzed out of holding time because of analytical difficulties.							
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.							

Collection Date/Time: 05/10/2021 11:31

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2246344	EPA 180.1 Rev. 2.0	Turbidity	15		NTU	P398004		
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P398645		
		Sulfate	0.34	I	mg SO4/L	P398648		
		Color (true)	63	AQ	PCU	P398325		
	SM 2120 B-2011	Total Alkalinity	11		mg CaCO3/L	P398273		
	SM 2320 B-2011	TDS	54		mg/L	P398439		
	SM 2540 C-2011	TSS	18		mg/L	P398332		
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398696		
2246350	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P398305		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P398168		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P398122		
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P398213		
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P398165		
2246356	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P398023		
2246377	EPA 200.7 Rev. 4.4	Calcium	5.19		mg/L	P398413		
		Iron	1.50E+03		ug/L	P398413		
		Magnesium	1.48		mg/L	P398413		
		Potassium	1.3		mg/L	P398413		
		Sodium	2.2		mg/L	P398413		
		Strontium	11.0		ug/L	P398413		
		Tin	3.0	U	ug/L	P398413		
	EPA 200.8 Rev. 5.4	Titanium	1.4	I	ug/L	P398413		
		Vanadium	2.0	U	ug/L	P398413		
		Zinc	5.0	U	ug/L	P398413		
		Aluminum	252		ug/L	P398413		
		Antimony	0.050	U	ug/L	P398413		
		Arsenic	0.75		ug/L	P398413		
		Barium	14.3		ug/L	P398413		
		Beryllium	0.023	I	ug/L	P398413		
		Boron**	11.4		ug/L	P398413		
		Cadmium	0.020	U	ug/L	P398413		
		Chromium	0.40	U	ug/L	P398413		
		Cobalt	0.250		ug/L	P398413		
		Copper	0.73	I	ug/L	P398413		
		Lead	0.89		ug/L	P398413		
		Manganese	109		ug/L	P398413		
		Molybdenum	0.15	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	19.1		mg/L	P398413	

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
SM 2120 B-2011: The sample was reanalyzed out of holding time because of analytical difficulties.							
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.							

Sample Location: Scurlock Creek at Pilgrim Rd

Collection Date/Time: 05/10/2021 12:41

Field ID: G3WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246345	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P398645	
		Sulfate	0.37	I	mg SO4/L	P398648	
		Color (true)	120		PCU	P398009	
	SM 2120 B-2011	Total Alkalinity	8.8		mg CaCO3/L	P398273	
	SM 2540 C-2011	TDS	46		mg/L	P398439	
	SM 2540 D-2011	TSS	10		mg/L	P398332	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398696	
2246351	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P398356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P398122	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P398281	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P398165	
2246357	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P398023	
2246378	EPA 200.7 Rev. 4.4	Calcium	5.34		mg/L	P398413	
		Iron	1.59E+03		ug/L	P398413	
		Magnesium	0.92		mg/L	P398413	
		Potassium	0.95	I	mg/L	P398413	
		Sodium	1.4	I	mg/L	P398413	
		Strontium	9.3		ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	2.4	I	ug/L	P398413	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P398413	
		Zinc	12	I	ug/L	P398413	
		Aluminum	512		ug/L	P398413	
		Antimony	0.056	I	ug/L	P398413	
		Arsenic	0.71		ug/L	P398413	
		Barium	16.4		ug/L	P398413	
		Beryllium	0.028	I	ug/L	P398413	
		Boron**	11.9		ug/L	P398413	
		Cadmium	0.022	I	ug/L	P398413	
		Chromium	0.63	I	ug/L	P398413	
		Cobalt	0.573		ug/L	P398413	
		Copper	0.87		ug/L	P398413	
		Lead	0.81		ug/L	P398413	
		Manganese	247		ug/L	P398413	
		Molybdenum	0.15	U	ug/L	P398413	
		Nickel	0.66	I	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	17.1		mg/L	P398413	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.

Sample Location: FB

Collection Date/Time: 05/10/2021 11:52

Field ID: FB_05102021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246361	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P398645	
		Sulfate	0.20	U	mg SO4/L	P398648	
		Color (true)	2.5	U	PCU	P398010	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P398477	
	SM 2540 C-2011	TDS	15	U	mg/L	P398438	
	SM 2540 D-2011	TSS	2	U	mg/L	P398331	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398697	
2246362	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P398357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P398281	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P398166	
2246363	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P398024	
2246382	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P398413	
		Iron	30	U	ug/L	P398413	
		Magnesium	0.040	U	mg/L	P398413	
		Potassium	0.30	U	mg/L	P398413	
		Sodium	0.50	U	mg/L	P398413	
		Strontium	2.0	U	ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	0.75	U	ug/L	P398413	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P398413	
		Zinc	5.0	U	ug/L	P398413	
		Aluminum	5.0	U	ug/L	P398413	
		Antimony	0.050	U	ug/L	P398413	
		Arsenic	0.050	U	ug/L	P398413	
		Barium	0.20	U	ug/L	P398413	
		Beryllium	0.010	U	ug/L	P398413	
		Boron**	2.0	U	ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	0.40	U	ug/L	P398413	
		Cobalt	0.020	U	ug/L	P398413	
		Copper	0.40	U	ug/L	P398413	
		Lead	0.20	U	ug/L	P398413	
		Manganese	0.10	U	ug/L	P398413	
		Molybdenum	0.15	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	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: The result was confirmed on 05/17/2021.

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

Sample Location: Pine Barn Creek at Woodrest Rd

Collection Date/Time: 05/10/2021 13:21

Field ID: G3WA0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246346	EPA 180.1 Rev. 2.0	Turbidity	60		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P398645	
		Sulfate	0.28	I	mg SO4/L	P398648	
		Color (true)	56	Q	PCU	P398325	
	SM 2120 B-2011	Total Alkalinity	13		mg CaCO3/L	P398273	
	SM 2540 C-2011	TDS	77		mg/L	P398439	
	SM 2540 D-2011	TSS	15		mg/L	P398332	
	SM 4500 F-C-2011	Fluoride	0.061	I	mg F/L	P398696	
2246352	EPA 350.1 Rev. 2.0	Ammonia-N	0.32		mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P398356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P398122	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P398281	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P398166	
2246358	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P398023	
2246379	EPA 200.7 Rev. 4.4	Calcium	3.77		mg/L	P398413	
		Iron	6.28E+03		ug/L	P398413	
		Magnesium	1.55		mg/L	P398413	
		Potassium	2.3		mg/L	P398413	
		Sodium	1.1	I	mg/L	P398413	
		Strontium	7.9	I	ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	17.2		ug/L	P398413	
	EPA 200.8 Rev. 5.4	Vanadium	5.5	I	ug/L	P398413	
		Zinc	13	I	ug/L	P398413	
		Aluminum	6.31E+03		ug/L	P398413	
		Antimony	0.095	I	ug/L	P398413	
		Arsenic	2.05		ug/L	P398413	
		Barium	14.3		ug/L	P398413	
		Beryllium	0.048		ug/L	P398413	
		Boron**	15.6		ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	2.4		ug/L	P398413	
		Cobalt	0.729		ug/L	P398413	
		Copper	1.10		ug/L	P398413	
		Lead	1.60		ug/L	P398413	
		Manganese	439		ug/L	P398413	
		Molybdenum	0.19	I	ug/L	P398413	
		Nickel	1.3	I	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	15.8		mg/L	P398413	

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
SM 2120 B-2011: The sample was reanalyzed out of holding time because of analytical difficulties.							
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.							

Sample Location: Unnamed Creek at Woodrest Rd

Collection Date/Time: 05/10/2021 14:01

Field ID: G3WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246347	EPA 180.1 Rev. 2.0	Turbidity	45		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P398645	
		Sulfate	0.55		mg SO4/L	P398648	
		Color (true)	79		PCU	P398012	
	SM 2320 B-2011	Total Alkalinity	4.5		mg CaCO3/L	P398273	
	SM 2540 C-2011	TDS	45		mg/L	P398439	
	SM 2540 D-2011	TSS	29		mg/L	P398332	
2246353	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398696	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P398356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P398281	
2246359	SM 5310 B-2011	Organic Carbon	13		mg C/L	P398166	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P398024	
2246380	EPA 200.7 Rev. 4.4	Calcium	3.21		mg/L	P398413	
		Iron	2.43E+03		ug/L	P398413	
		Magnesium	1.31		mg/L	P398413	
		Potassium	1.7		mg/L	P398413	
		Sodium	1.7	I	mg/L	P398413	
		Strontium	9.3		ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	7.2		ug/L	P398413	
		Vanadium	3.7	I	ug/L	P398413	
		Zinc	6.5	I	ug/L	P398413	
	EPA 200.8 Rev. 5.4	Aluminum	1.46E+03		ug/L	P398413	
		Antimony	0.067	I	ug/L	P398413	
		Arsenic	1.15		ug/L	P398413	
		Barium	19.7		ug/L	P398413	
		Beryllium	0.043		ug/L	P398413	
		Boron**	11.7		ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	1.3	I	ug/L	P398413	
		Cobalt	0.483		ug/L	P398413	
		Copper	1.20		ug/L	P398413	
		Lead	1.53		ug/L	P398413	
		Manganese	204		ug/L	P398413	
		Molybdenum	0.15	U	ug/L	P398413	
		Nickel	0.71	I	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	13.4		mg/L	P398413	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.

Sample Location: Unnamed Creek at Palmview Rd

Collection Date/Time: 05/10/2021 14:28

Field ID: G3WA0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2246348	EPA 180.1 Rev. 2.0	Turbidity	19		NTU	P398004	
	EPA 300.0 Rev. 2.1	Chloride	5.3		mg Cl/L	P398645	
		Sulfate	0.41	I	mg SO4/L	P398648	
		Color (true)	61		PCU	P398012	
	SM 2320 B-2011	Total Alkalinity	6.6		mg CaCO3/L	P398273	
	SM 2540 C-2011	TDS	51		mg/L	P398439	
	SM 2540 D-2011	TSS	11		mg/L	P398332	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P398696	
2246354	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P398305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P398356	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P398123	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P398281	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P398166	
2246360	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P398024	
2246381	EPA 200.7 Rev. 4.4	Calcium	3.42		mg/L	P398413	
		Iron	2.39E+03		ug/L	P398413	
		Magnesium	1.27		mg/L	P398413	
		Potassium	1.5		mg/L	P398413	
		Sodium	1.7	I	mg/L	P398413	
		Strontium	9.3		ug/L	P398413	
		Tin	3.0	U	ug/L	P398413	
		Titanium	4.0		ug/L	P398413	
	EPA 200.8 Rev. 5.4	Vanadium	2.4	I	ug/L	P398413	
		Zinc	7.2	I	ug/L	P398413	
		Aluminum	782		ug/L	P398413	
		Antimony	0.061	I	ug/L	P398413	
		Arsenic	1.15		ug/L	P398413	
		Barium	18.5		ug/L	P398413	
		Beryllium	0.030	I	ug/L	P398413	
		Boron**	12.8		ug/L	P398413	
		Cadmium	0.020	U	ug/L	P398413	
		Chromium	0.78	I	ug/L	P398413	
		Cobalt	0.525		ug/L	P398413	
		Copper	0.95		ug/L	P398413	
		Lead	0.97		ug/L	P398413	
		Manganese	351		ug/L	P398413	
		Molybdenum	0.15	U	ug/L	P398413	
		Nickel	0.53	I	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	13.8		mg/L	P398413	

Ref. Method and Comment:
 EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 05/26/2021.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P398004**

Component	Result	Code	Units
Turbidity	0.10	U	NTU

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

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: P398413**

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: P398645**

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1**Batch ID: P398648**

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398305

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398213

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398023

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

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

Reference Method: SM 2120 B-2011
Batch ID: P398009

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P398010

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P398012

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P398325

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P398273

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

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

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

Reference Method: SM 2540 C-2011
Batch ID: P398438

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P398439

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P398331

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P398332

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P398696

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: P398165

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

Reference Method: SM 5310 B-2011
Batch ID: P398166

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
Calcium	111		P	85 - 115
Iron	104		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	103		P	85 - 115
Sodium	108		P	85 - 115
Strontium	98.1		P	85 - 115
Tin	101		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	99.9		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
Barium	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
Cobalt	101		P	80 - 120
Copper	104		P	80 - 120
Lead	95.7		P	85 - 115
Manganese	104		P	80 - 120
Molybdenum	105		P	80 - 120
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: P398645

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P398648

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P398305

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398213

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P398009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P398010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P398012

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

Reference Method: SM 2120 B-2011
Batch ID: P398325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P398273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	93 - 104

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 4500 F-C-2011
Batch ID: P398696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.2		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: P398165

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P398166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		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	Calcium	107		P	80 - 120
2246910	Iron	114	114	P/P	80 - 120
2246910	Magnesium	104		P	80 - 120
2246910	Potassium	96.5		P	80 - 120
2246910	Sodium	105		P	80 - 120
2246910	Strontium	103	103	P/P	80 - 120
2246910	Tin	106	107	P/P	80 - 120
2246910	Titanium	109	110	P/P	80 - 120
2246910	Vanadium	108	109	P/P	80 - 120
2246910	Zinc	105	106	P/P	80 - 120
2247257	Calcium	108		P	80 - 120
2247257	Iron	108		P	80 - 120
2247257	Magnesium	104		P	80 - 120
2247257	Potassium	99.4		P	80 - 120
2247257	Sodium	106		P	80 - 120
2247257	Strontium	101		P	80 - 120
2247257	Tin	102		P	80 - 120
2247257	Titanium	106		P	80 - 120
2247257	Vanadium	107		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	Barium	104	102	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	Cobalt	102	101	P/P	80 - 120
2246910	Copper	104	103	P/P	80 - 120
2246910	Lead	95.9	94.0	P/P	80 - 120
2246910	Manganese	104	102	P/P	80 - 120
2246910	Molybdenum	105	104	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	Barium	101		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	Cobalt	101		P	80 - 120
2247257	Copper	103		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

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

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2247257	Lead	93.6		P	80 - 120
2247257	Manganese	98.1		P	80 - 120
2247257	Molybdenum	103		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: P398645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246132	Chloride	102		P	90 - 110
2246271	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246132	Sulfate	101		P	90 - 110
2246271	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246436	Ammonia-N	97.8	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246133	Kjeldahl Nitrogen	98.0	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246351	Kjeldahl Nitrogen	102	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246263	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246353	NO2NO3-N	95.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246130	Total-P	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245864	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246267	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246360	O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P398696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246089	Fluoride	97.2	98.5	P/P	92 - 107

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: P398165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2245909	Organic Carbon	97.7	97.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P398166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2246354	Organic Carbon	97.0	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P398004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246343	Turbidity	6.15	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	Calcium	0.273	Spike	P	0 - 20
2246910	Iron	0.00452	Spike	P	0 - 20
2246910	Magnesium	0.519	Spike	P	0 - 20
2246910	Potassium	0.0304	Spike	P	0 - 20
2246910	Sodium	0.265	Spike	P	0 - 20
2246910	Strontium	0.0884	Spike	P	0 - 20
2246910	Tin	0.917	Spike	P	0 - 20
2246910	Titanium	0.824	Spike	P	0 - 20
2246910	Vanadium	0.924	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	Barium	1.75	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	Cobalt	1.12	Spike	P	0 - 20
2246910	Copper	0.555	Spike	P	0 - 20
2246910	Lead	2.02	Spike	P	0 - 20
2246910	Manganese	1.93	Spike	P	0 - 20
2246910	Molybdenum	0.631	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: P398645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246271	Chloride	0.324	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P398648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246271	Sulfate	1.21	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P398305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246436	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246133	Kjeldahl Nitrogen	1.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246351	Kjeldahl Nitrogen	3.50	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P398357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246444	Kjeldahl Nitrogen	0.327	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246263	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P398123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246353	NO2NO3-N	0.681	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P398213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246130	Total-P	0.955	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P398281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245864	Total-P	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246267	O-Phosphate-P	1.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246360	O-Phosphate-P	0.261	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P398009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246259	Color (true)	3.28	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P398010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246478	Color (true)	0.919	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P398012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246343	Color (true)	7.56	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P398325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246344	Color (true)	0.849	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P398273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245659	Total Alkalinity	0.454	Sample	P	0 - 8.1

Quality Assurance Report Precision

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 2540 C-2011
Batch ID: P398438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246475	TDS	2.47	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P398439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246484	TDS	8.41	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P398331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246475	TSS	7.69	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P398332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246484	TSS	3.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P398696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246089	Fluoride	0.934	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

Reference Method: SM 5310 B-2011
Batch ID: P398165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2245909	Organic Carbon	0.586	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011

Batch ID: P398166

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2246354	Organic Carbon	0.510	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105342

Included Lab Sample IDs: 2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361

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

Reference Method: SM 2120 B-2011

Run ID: A105343

Included Lab Sample IDs: 2246345, 2246348, 2246361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115
Color (true)	98.8	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105353

Included Lab Sample IDs: 2246355, 2246356, 2246357, 2246358, 2246359, 2246360, 2246363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.7	P/P	90 - 110
O-Phosphate-P	99.7	99.7	P/P	90 - 110
O-Phosphate-P	99.8	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A105365

Included Lab Sample IDs: 2246347

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105396

Included Lab Sample IDs: 2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A105417

Included Lab Sample IDs: 2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	99.0	P/P	90 - 110
Organic Carbon	99.0	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105442

Included Lab Sample IDs: 2246349, 2246350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A105458

Included Lab Sample IDs: 2246343, 2246344, 2246345, 2246346, 2246347, 2246348

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.8	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105460

Included Lab Sample IDs: 2246349, 2246350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A105472

Included Lab Sample IDs: 2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.0	P/P	90 - 110
Ammonia-N	99.9	98.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A105481

Included Lab Sample IDs: 2246343, 2246344, 2246346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105495

Included Lab Sample IDs: 2246351, 2246352, 2246353, 2246354

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A105504

Included Lab Sample IDs: 2246362

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105542

Included Lab Sample IDs: 2246351, 2246352, 2246353, 2246354

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A105548

Included Lab Sample IDs: 2246361

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105550

Included Lab Sample IDs: 2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	99.6	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A105563

Included Lab Sample IDs: 2246362

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105582

Included Lab Sample IDs: 2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Aluminum	99.5	104	P/P	90 - 110
Arsenic	104	105	P/P	90 - 110
Arsenic	105	106	P/P	90 - 110
Barium	104	106	P/P	90 - 110
Barium	106	106	P/P	90 - 110
Beryllium	103	104	P/P	90 - 110
Beryllium	103	103	P/P	90 - 110
Boron	100	102	P/P	90 - 110
Boron	97.2	100	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Cadmium	104	106	P/P	90 - 110
Chromium	100	104	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Cobalt	104	105	P/P	90 - 110
Cobalt	99.3	104	P/P	90 - 110
Copper	104	104	P/P	90 - 110
Copper	99.9	104	P/P	90 - 110
Manganese	103	104	P/P	90 - 110
Manganese	98.8	103	P/P	90 - 110
Molybdenum	103	103	P/P	90 - 110
Molybdenum	103	103	P/P	90 - 110
Nickel	101	106	P/P	90 - 110
Nickel	106	106	P/P	90 - 110
Selenium	104	104	P/P	90 - 110
Selenium	104	104	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Silver	99.6	102	P/P	90 - 110
Thallium	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105582

Included Lab Sample IDs: 2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	99.6	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105607

Included Lab Sample IDs: 2246379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.7	105	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A105621

Included Lab Sample IDs: 2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	102	P/P	90 - 110
Calcium	100	100	P/P	95 - 105
Iron	101	104	P/P	90 - 110
Iron	102	101	P/P	95 - 105
Magnesium	100	103	P/P	90 - 110
Magnesium	101	100	P/P	95 - 105
Potassium	98.0	99.7	P/P	90 - 110
Potassium	98.8	98.0	P/P	95 - 105
Sodium	100	99.2	P/P	95 - 105
Sodium	99.2	101	P/P	90 - 110
Strontium	97.6	99.0	P/P	90 - 110
Strontium	99.4	97.6	P/P	95 - 105
Tin	101	99.1	P/P	95 - 105
Tin	99.1	101	P/P	90 - 110
Titanium	95.7	98.8	P/P	90 - 110
Titanium	97.6	95.7	P/P	95 - 105
Vanadium	97.8	99.3	P/P	90 - 110
Vanadium	99.5	97.8	P/P	95 - 105
Zinc	102	103	P/P	90 - 110
Zinc	104	102	P/P	95 - 105

Reference Method: SM 4500 F-C-2011

Run ID: A105626

Included Lab Sample IDs: 2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.0	P/P	90 - 110
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105651

Included Lab Sample IDs: 2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	100	99.8	P/P	90 - 110
Antimony	99.0	100	P/P	90 - 110
Lead	95.3	94.1	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A105651

Included Lab Sample IDs: 2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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						6.15	
EPA 200.7 Rev. 4.4	Calcium	111	107	108				0.273
	Iron	104	114	114	108			0.0045
	Magnesium	108	104	104				0.519
	Potassium	103	96.5	99.4				0.0304
	Sodium	108	105	106				0.265
	Strontium	98.1	103	103	101			0.0884
	Tin	101	106	107	102			0.917
	Titanium	101	109	110	106			0.824
	Vanadium	99.9	108	109	107			0.924
	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
	Barium	104	104	102	101			1.75
	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
	Cobalt	101	102	101	101			1.12
	Copper	104	104	103	103			0.555
	Lead	95.7	95.9	94.0	93.6			2.02
	Manganese	104	104	102	98.1			1.93
	Molybdenum	105	105	104	103			0.631
	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	102	99.9	102			0.324	
	Sulfate	101	99.3	101			1.21	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	97.8	99.6				1.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1	98.0	96.4				1.25
	Kjeldahl Nitrogen	104	102	108				3.50
	Kjeldahl Nitrogen	102						0.327
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	100				0.499
	NO2NO3-N	100	95.8					0.681
EPA 365.1 Rev. 2.0	Total-P	106	106	108				0.955
	Total-P	104	108	107				0.990
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	100	101				1.19
	O-Phosphate-P	99.3	99.7	99.4				0.261
SM 2120 B-2011	Color (true)	100					3.28	
	Color (true)	100					0.919	
	Color (true)	102					7.56	
	Color (true)	99.7					0.849	
SM 2320 B-2011	Total Alkalinity	99.0					0.454	
	Total Alkalinity	98.9					0.470	
SM 2540 C-2011	TDS						2.47	
	TDS						8.41	
SM 2540 D-2011	TSS						7.69	
	TSS						3.92	
SM 4500 F-C-2011	Fluoride	94.2	97.2	98.5				0.934
	Fluoride	96.0	98.2	98.8				0.479
SM 5310 B-2011	Organic Carbon	95.7	97.7	97.0				0.586
	Organic Carbon	96.5	97.0	97.8				0.510

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2246376, 2246377, 2246378, 2246379, 2246380, 2246381, 2246382
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2246355, 2246356, 2246357, 2246358, 2246359, 2246360, 2246363
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2246376, 2246377, 2246378, 2246379, 2246380, 2246381
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2246349, 2246350, 2246351, 2246352, 2246353, 2246354, 2246362

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	05/10/2021			05/11/2021 16:10	Yen Ta	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
EPA 200.7 Rev. 4.4	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 10:15	Betina Topolski	2246382
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 10:46	Betina Topolski	2246376
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 10:51	Betina Topolski	2246377
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 10:56	Betina Topolski	2246378
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 11:01	Betina Topolski	2246379
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 11:28	Betina Topolski	2246380
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/24/2021 11:34	Betina Topolski	2246381
EPA 200.8 Rev. 5.4	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 21:58	McKinley C Carter	2246382
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 23:31	McKinley C Carter	2246376
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 23:39	McKinley C Carter	2246377
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 23:48	McKinley C Carter	2246378
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/20/2021 23:56	McKinley C Carter	2246379
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 00:05	McKinley C Carter	2246380
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 00:13	McKinley C Carter	2246381
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/21/2021 17:42	McKinley C Carter	2246379
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 15:09	Alexander Thompson	2246382
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:16	Alexander Thompson	2246376
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:22	Alexander Thompson	2246377
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:28	Alexander Thompson	2246378
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:34	Alexander Thompson	2246379
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:40	Alexander Thompson	2246380
	05/10/2021	05/19/2021 16:25	Elliott D. Healy	05/25/2021 16:46	Alexander Thompson	2246381
EPA 300.0 Rev. 2.1	05/10/2021			05/21/2021 17:58	Lipi Saha	2246343
	05/10/2021			05/21/2021 18:10	Lipi Saha	2246344
	05/10/2021			05/21/2021 18:22	Lipi Saha	2246345
	05/10/2021			05/21/2021 18:34	Lipi Saha	2246346
	05/10/2021			05/21/2021 18:46	Lipi Saha	2246347
	05/10/2021			05/21/2021 18:58	Lipi Saha	2246348
	05/10/2021			05/21/2021 19:10	Lipi Saha	2246361
EPA 350.1 Rev. 2.0	05/10/2021			05/17/2021 13:19	Roberta Tatti	2246349
	05/10/2021			05/17/2021 13:23	Roberta Tatti	2246350
	05/10/2021			05/17/2021 13:25	Roberta Tatti	2246351
	05/10/2021			05/17/2021 13:29	Roberta Tatti	2246354
	05/10/2021			05/17/2021 13:34	Roberta Tatti	2246362
	05/10/2021			05/17/2021 14:39	Roberta Tatti	2246352
	05/10/2021			05/17/2021 14:41	Roberta Tatti	2246353
EPA 351.2 Rev. 2.0	05/10/2021	05/13/2021 18:44	Benjamin T. Nordmann	05/14/2021 16:13	Virginia P. Brown	2246349
	05/10/2021	05/13/2021 18:44	Benjamin T. Nordmann	05/14/2021 16:14	Virginia P. Brown	2246350

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 351.2 Rev. 2.0	05/10/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 14:47	Virginia P. Brown	2246351
	05/10/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 14:52	Virginia P. Brown	2246352
	05/10/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 14:53	Virginia P. Brown	2246353
	05/10/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/19/2021 14:55	Virginia P. Brown	2246354
	05/10/2021	05/18/2021 13:32	Benjamin T. Nordmann	05/20/2021 12:16	Virginia P. Brown	2246362
EPA 353.2 Rev. 2.0	05/10/2021			05/13/2021 10:09	Beverly Y. Sanders	2246349
	05/10/2021			05/13/2021 10:10	Beverly Y. Sanders	2246350
	05/10/2021			05/13/2021 10:11	Beverly Y. Sanders	2246351
	05/10/2021			05/13/2021 10:13	Beverly Y. Sanders	2246352
	05/10/2021			05/13/2021 10:20	Beverly Y. Sanders	2246353
	05/10/2021			05/13/2021 10:26	Beverly Y. Sanders	2246354
EPA 365.1 Rev. 2.0	05/10/2021			05/13/2021 10:27	Beverly Y. Sanders	2246362
	05/10/2021	05/14/2021 13:32	Yen Ta	05/17/2021 12:16	Shengyu Ding	2246349, 2246350
	05/10/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:22	Shengyu Ding	2246351
	05/10/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:23	Shengyu Ding	2246352
	05/10/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:26	Shengyu Ding	2246353
	05/10/2021	05/17/2021 13:26	Yen Ta	05/18/2021 10:27	Shengyu Ding	2246354
EPA 365.1 Rev. 2.0 dissolved	05/10/2021	05/17/2021 13:26	Yen Ta	05/18/2021 14:23	Shengyu Ding	2246362
	05/10/2021			05/11/2021 15:44	Blanca Fach	2246355
	05/10/2021			05/11/2021 15:45	Blanca Fach	2246356
	05/10/2021			05/11/2021 15:46	Blanca Fach	2246357
	05/10/2021			05/11/2021 15:50	Blanca Fach	2246360
	05/10/2021			05/11/2021 15:57	Blanca Fach	2246363
	05/10/2021			05/11/2021 15:59	Blanca Fach	2246359
	05/10/2021			05/11/2021 16:42	Blanca Fach	2246358
SM 2120 B-2011	05/10/2021			05/11/2021 16:08	Sarah A Nixon	2246345
	05/10/2021			05/11/2021 16:15	Sarah A Nixon	2246361
	05/10/2021			05/11/2021 16:58	Sarah A Nixon	2246348
	05/10/2021			05/11/2021 18:22	Sarah A Nixon	2246347
	05/10/2021			05/17/2021 15:17	Sarah A Nixon	2246343
	05/10/2021			05/17/2021 15:18	Sarah A Nixon	2246344
	05/10/2021			05/17/2021 15:21	Sarah A Nixon	2246346
	05/10/2021			05/14/2021 05:41	Dale L. Simmons	2246343
SM 2320 B-2011	05/10/2021			05/14/2021 05:52	Dale L. Simmons	2246344
	05/10/2021			05/14/2021 06:03	Dale L. Simmons	2246345
	05/10/2021			05/14/2021 06:15	Dale L. Simmons	2246346
	05/10/2021			05/14/2021 06:25	Dale L. Simmons	2246347
	05/10/2021			05/14/2021 06:35	Dale L. Simmons	2246348
	05/10/2021			05/18/2021 16:59	Dale L. Simmons	2246361
SM 2340B	05/10/2021			05/24/2021 10:46	Betina Topolski	2246376

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2340B	05/10/2021			05/24/2021 10:51	Betina Topolski	2246377
	05/10/2021			05/24/2021 10:56	Betina Topolski	2246378
	05/10/2021			05/24/2021 11:01	Betina Topolski	2246379
	05/10/2021			05/24/2021 11:28	Betina Topolski	2246380
	05/10/2021			05/24/2021 11:34	Betina Topolski	2246381
SM 2540 C-2011	05/10/2021			05/14/2021 15:25	Yijie Li	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 2540 D-2011	05/10/2021			05/14/2021 15:25	Yijie Li	2246343, 2246344, 2246345, 2246346, 2246347, 2246348, 2246361
SM 4500 F-C-2011	05/10/2021			05/24/2021 17:55	Dale L. Simmons	2246343
	05/10/2021			05/24/2021 18:00	Dale L. Simmons	2246344
	05/10/2021			05/24/2021 18:05	Dale L. Simmons	2246345
	05/10/2021			05/24/2021 18:10	Dale L. Simmons	2246346
	05/10/2021			05/24/2021 18:15	Dale L. Simmons	2246347
	05/10/2021			05/24/2021 18:21	Dale L. Simmons	2246348
	05/10/2021			05/24/2021 19:15	Dale L. Simmons	2246361
SM 5310 B-2011	05/10/2021			05/13/2021 03:08	Madeline Gruver	2246349
	05/10/2021			05/13/2021 03:21	Madeline Gruver	2246350
	05/10/2021			05/13/2021 03:34	Madeline Gruver	2246351
	05/10/2021			05/13/2021 04:14	Madeline Gruver	2246354
	05/10/2021			05/13/2021 05:35	Madeline Gruver	2246352
	05/10/2021			05/13/2021 05:48	Madeline Gruver	2246353
	05/10/2021			05/13/2021 06:01	Madeline Gruver	2246362