

Chemical Analysis Report

WAS-SECT-2021-02-08-01

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

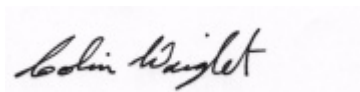
Event Description: **Alligator Creek**
Request ID: **RQ-2021-02-08-09**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 05-MAR-2021 10:06

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Unnamed Creek at Palmview Rd.

Collection Date/Time: 02/08/2021 13:26

Field ID: G3WA0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224147	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P393570	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P393880	
		Sulfate	0.88		mg SO4/L	P393883	
		Color (true)	81		PCU	P393562	
	SM 2320 B-2011	Total Alkalinity	3.1		mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	34		mg/L	P393820	
	SM 2540 D-2011	TSS	4	I	mg/L	P393813	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
2224153	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P393630	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P393836	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P393534	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	8.5		mg C/L	P393842	
2224159	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P393558	
2224177	EPA 200.7 Rev. 4.4	Barium	14.1		ug/L	P393556	
		Calcium	2.54		mg/L	P393556	
		Iron	690		ug/L	P393556	
		Magnesium	1.01		mg/L	P393556	
		Manganese	89.0		ug/L	P393556	
		Potassium	1.3		mg/L	P393556	
		Sodium	2.1		mg/L	P393556	
		Strontium	7.3	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	15.8		ug/L	P393556	
		Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.0	U	ug/L	P393556	
	EPA 200.8 Rev. 5.4	Aluminum	383		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.40		ug/L	P393556	
		Beryllium	0.014	I	ug/L	P393556	
		Boron**	11.0		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.45	I	ug/L	P393556	
		Cobalt	0.212		ug/L	P393556	
		Copper	0.61	I	ug/L	P393556	
		Lead	0.50		ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	U	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
	SM 2340B	Hardness	10.5		mg/L	P393556	

Field ID: G3WA0013**Matrix: W-SURF-FRH**

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

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 02/25/2021.

Sample Location: Pine Barn Creek at Woodrest Rd.

Collection Date/Time: 02/08/2021 12:07

Field ID: G3WA0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224148	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P393570	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P393880	
		Sulfate	0.20	U	mg SO4/L	P393883	
		Color (true)	100		PCU	P393562	
	SM 2120 B-2011	Total Alkalinity	3.2		mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	38		mg/L	P393821	
	SM 2540 D-2011	TSS	2	I	mg/L	P393814	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
2224154	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P393630	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P393837	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393534	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P393932	
2224160	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P393558	
2224178	EPA 200.7 Rev. 4.4	Barium	8.3		ug/L	P393556	
		Calcium	2.31		mg/L	P393556	
		Iron	1.31E+03		ug/L	P393556	
		Magnesium	0.84		mg/L	P393556	
		Manganese	135		ug/L	P393556	
		Potassium	1.4		mg/L	P393556	
		Sodium	2.1		mg/L	P393556	
		Strontium	5.3	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	3.3		ug/L	P393556	
		Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.0	U	ug/L	P393556	
	EPA 200.8 Rev. 5.4	Aluminum	239		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.35		ug/L	P393556	
		Beryllium	0.010	U	ug/L	P393556	
		Boron**	13.2		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.40	U	ug/L	P393556	
		Cobalt	0.267		ug/L	P393556	
		Copper	0.59	I	ug/L	P393556	
		Lead	0.33	I	ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	U	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
		Hardness	9.2		mg/L	P393556	

Field ID: G3WA0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Unnamed Creek at Woodrest Rd.

Collection Date/Time: 02/08/2021 12:56

Field ID: G3WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224149	EPA 180.1 Rev. 2.0	Turbidity	9.5	A	NTU	P393571	
	EPA 300.0 Rev. 2.1	Chloride	6.1		mg Cl/L	P393880	
		Sulfate	0.70		mg SO4/L	P393883	
		Color (true)	93		PCU	P393563	
	SM 2120 B-2011	Total Alkalinity	2.1	I	mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	42		mg/L	P393821	
	SM 2540 D-2011	TSS	2	I	mg/L	P393814	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
2224155	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P393631	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P393837	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P393535	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P393932	
2224161	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P393559	
2224179	EPA 200.7 Rev. 4.4	Barium	14.6		ug/L	P393556	
		Calcium	2.35		mg/L	P393556	
		Iron	770		ug/L	P393556	
		Magnesium	1.0		mg/L	P393556	
		Manganese	66.7		ug/L	P393556	
		Potassium	1.1	I	mg/L	P393556	
		Sodium	2.1		mg/L	P393556	
		Strontium	7.5	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	21.2		ug/L	P393556	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.0	U	ug/L	P393556	
		Aluminum	533		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.35		ug/L	P393556	
		Beryllium	0.012	I	ug/L	P393556	
		Boron**	10.9		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.60	I	ug/L	P393556	
		Cobalt	0.173		ug/L	P393556	
		Copper	0.54	I	ug/L	P393556	
		Lead	0.52		ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	U	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
		Hardness	10		mg/L	P393556	

Field ID: G3WA0010**Matrix: W-SURF-FRH**

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

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 02/25/2021.

Sample Location: Scurlock Creek at Pilgrim Rd.

Collection Date/Time: 02/08/2021 11:36

Field ID: G3WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224150	EPA 180.1 Rev. 2.0	Turbidity	7.4		NTU	P393571	
	EPA 300.0 Rev. 2.1	Chloride	4.1		mg Cl/L	P393880	
		Sulfate	0.31	I	mg SO4/L	P393883	
		Color (true)	120		PCU	P393563	
	SM 2120 B-2011	Total Alkalinity	3.5		mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	43		mg/L	P393821	
	SM 2540 D-2011	TSS	4	I	mg/L	P393814	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
2224156	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P393631	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P393837	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P393535	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	5.4		mg C/L	P393932	
2224162	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P393559	
2224180	EPA 200.7 Rev. 4.4	Barium	11.5		ug/L	P393556	
		Calcium	2.59		mg/L	P393556	
		Iron	700		ug/L	P393556	
		Magnesium	0.69		mg/L	P393556	
		Manganese	75.1		ug/L	P393556	
		Potassium	0.71	I	mg/L	P393556	
		Sodium	1.8	I	mg/L	P393556	
		Strontium	5.4	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	18.1		ug/L	P393556	
		Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.2	I	ug/L	P393556	
	EPA 200.8 Rev. 5.4	Aluminum	519		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.36		ug/L	P393556	
		Beryllium	0.017	I	ug/L	P393556	
		Boron**	9.9		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.63	I	ug/L	P393556	
		Cobalt	0.236		ug/L	P393556	
		Copper	0.60	I	ug/L	P393556	
		Lead	0.51		ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	I	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
	SM 2340B	Hardness	9.3		mg/L	P393556	

Field ID: G3WA0009

Matrix: W-SURF-FRH

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

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 02/25/2021.

Sample Location: Minnow Creek at Lovewood Rd.

Collection Date/Time: 02/08/2021 10:01

Field ID: G3WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224151	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P393571	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P393880	
		Sulfate	0.65		mg SO4/L	P393883	
		Color (true)	67		PCU	P393563	
	SM 2120 B-2011	Total Alkalinity	5.0		mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	40		mg/L	P393821	
	SM 2540 D-2011	TSS	3	I	mg/L	P393814	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
2224157	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P393631	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62	J	mg N/L	P393840	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P393535	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P393932	
2224163	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P393559	
2224181	EPA 200.7 Rev. 4.4	Barium	12.3		ug/L	P393556	
		Calcium	2.94		mg/L	P393556	
		Iron	790		ug/L	P393556	
		Magnesium	1.11		mg/L	P393556	
		Manganese	28.3		ug/L	P393556	
		Potassium	1.2	I	mg/L	P393556	
		Sodium	1.9	I	mg/L	P393556	
		Strontium	7.6	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	19.6		ug/L	P393556	
		Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.0	U	ug/L	P393556	
	EPA 200.8 Rev. 5.4	Aluminum	483		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.31		ug/L	P393556	
		Beryllium	0.010	U	ug/L	P393556	
		Boron**	9.1		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.46	I	ug/L	P393556	
		Cobalt	0.085		ug/L	P393556	
		Copper	0.46	I	ug/L	P393556	
		Lead	0.44		ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	U	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
	SM 2340B	Hardness	11.9		mg/L	P393556	

Field ID: G3WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Alligator Creek Upstream of SR 273

Collection Date/Time: 02/08/2021 10:41

Field ID: G3WA0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224152	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P393571	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P393880	
		Sulfate	0.77		mg SO4/L	P393883	
		Color (true)	45	AQ	PCU	P394394	
	SM 2320 B-2011	Total Alkalinity	6.2		mg CaCO3/L	P393648	
	SM 2540 C-2011	TDS	30		mg/L	P393821	
	SM 2540 D-2011	TSS	4	I	mg/L	P393814	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393650	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P393631	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P393837	
2224158	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P393535	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P393714	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P393932	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.011		mg P/L	P393559	
	dissolved						
2224182	EPA 200.7 Rev. 4.4	Barium	12.3		ug/L	P393556	
		Calcium	3.63		mg/L	P393556	
		Iron	910		ug/L	P393556	
		Magnesium	1.25		mg/L	P393556	
		Manganese	31.0		ug/L	P393556	
		Potassium	1.7		mg/L	P393556	
		Sodium	2.2		mg/L	P393556	
		Strontium	7.9	I	ug/L	P393556	
		Tin	3.0	U	ug/L	P393556	
		Titanium	16.5		ug/L	P393556	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P393556	
		Zinc	5.0	U	ug/L	P393556	
		Aluminum	644		ug/L	P393556	
		Antimony	0.050	U	ug/L	P393556	
		Arsenic	0.39		ug/L	P393556	
		Beryllium	0.015	I	ug/L	P393556	
		Boron**	9.8		ug/L	P393556	
		Cadmium	0.020	U	ug/L	P393556	
		Chromium	0.66	I	ug/L	P393556	
		Cobalt	0.146		ug/L	P393556	
		Copper	0.58	I	ug/L	P393556	
		Lead	0.66		ug/L	P393556	
		Molybdenum	0.15	U	ug/L	P393556	
		Nickel	0.50	U	ug/L	P393556	
		Selenium	0.20	U	ug/L	P393556	
		Silver	0.010	U	ug/L	P393556	
		Thallium	0.10	U	ug/L	P393556	
		Hardness	14.2		mg/L	P393556	
	SM 2340B						

Field ID: G3WA0005

Matrix: W-SURF-FRH

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

SM 2120 B-2011: Sample reanalyzed out of holding time because of analytical difficulties.

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 02/25/2021.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P393570**

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P393571**

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4**Batch ID: P393556**

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
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: P393556**

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
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	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: P393880**

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393883

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393630

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393631

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393836

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393837

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393840

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393534

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393535

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393714

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393558

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393559

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

Reference Method: SM 2120 B-2011
Batch ID: P393562

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P393563

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P394394

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P393648

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

Reference Method: SM 2540 C-2011
Batch ID: P393820

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P393821

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393813

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P393814

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393650

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P393842

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

Reference Method: SM 5310 B-2011
Batch ID: P393932

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: P393556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	97.3		P	85 - 115
Calcium	99.2		P	85 - 115
Iron	101		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	98.3		P	85 - 115
Potassium	97.3		P	85 - 115
Sodium	98.3		P	85 - 115
Strontium	98.0		P	85 - 115
Tin	95.6		P	85 - 115
Titanium	93.1		P	85 - 115
Vanadium	92.7		P	85 - 115
Zinc	95.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P393556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	101		P	85 - 115
Beryllium	95.3		P	85 - 115
Boron	99.8		P	85 - 115
Cadmium	96.5		P	85 - 115
Chromium	95.6		P	85 - 115
Cobalt	104		P	85 - 115
Copper	97.1		P	85 - 115
Lead	103		P	85 - 115
Molybdenum	95.9		P	85 - 115
Nickel	97.4		P	85 - 115
Selenium	99.6		P	85 - 115
Silver	113		P	85 - 115
Thallium	95.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P393880

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P393883

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393630

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393631

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393836

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393840

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: P393534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393535

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393714

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393558

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: P393559

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P393562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P393563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P394394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	107		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P393648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P393650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P393842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P393932

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P393556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224038	Barium	100		P	80 - 120
2224038	Calcium	97.3		P	80 - 120
2224038	Iron	104		P	80 - 120
2224038	Magnesium	97.4		P	80 - 120
2224038	Manganese	102		P	80 - 120
2224038	Potassium	98.0		P	80 - 120
2224038	Sodium	99.7		P	80 - 120
2224038	Strontium	99.5		P	80 - 120
2224038	Tin	101		P	80 - 120
2224038	Titanium	98.7		P	80 - 120
2224038	Vanadium	99.2		P	80 - 120
2224038	Zinc	99.5		P	80 - 120
2224365	Barium	102	99.9	P/P	80 - 120
2224365	Calcium	100		P	80 - 120
2224365	Iron	103	102	P/P	80 - 120
2224365	Magnesium	104	104	P/P	80 - 120
2224365	Manganese	102	100	P/P	80 - 120
2224365	Potassium	97.3	97.6	P/P	80 - 120
2224365	Sodium	99.0		P	80 - 120
2224365	Strontium	101	99.5	P/P	80 - 120
2224365	Tin	97.0	96.9	P/P	80 - 120
2224365	Titanium	101	98.6	P/P	80 - 120
2224365	Vanadium	98.1	96.7	P/P	80 - 120
2224365	Zinc	100	98.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P393556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224038	Aluminum	102		P	80 - 120
2224038	Antimony	99.7		P	80 - 120
2224038	Arsenic	99.6		P	80 - 120
2224038	Beryllium	90.3		P	80 - 120
2224038	Boron	103		P	80 - 120
2224038	Cadmium	96.4		P	80 - 120
2224038	Chromium	95.4		P	80 - 120
2224038	Cobalt	102		P	80 - 120
2224038	Copper	92.9		P	80 - 120
2224038	Lead	102		P	80 - 120
2224038	Molybdenum	96.2		P	80 - 120
2224038	Nickel	93.0		P	80 - 120
2224038	Selenium	96.3		P	80 - 120
2224038	Silver	112		P	80 - 120
2224038	Thallium	96.0		P	80 - 120
2224365	Aluminum	104	96.4	P/P	80 - 120
2224365	Antimony	98.1	94.5	P/P	80 - 120
2224365	Arsenic	101	97.2	P/P	80 - 120
2224365	Beryllium	89.7	89.0	P/P	80 - 120
2224365	Boron	103	100	P/P	80 - 120
2224365	Cadmium	97.2	93.2	P/P	80 - 120
2224365	Chromium	95.3	91.8	P/P	80 - 120
2224365	Cobalt	104	100	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224365	Copper	97.8	93.9	P/P	80 - 120
2224365	Lead	104	99.6	P/P	80 - 120
2224365	Molybdenum	97.6	94.4	P/P	80 - 120
2224365	Nickel	95.6	91.7	P/P	80 - 120
2224365	Selenium	97.3	95.5	P/P	80 - 120
2224365	Silver	112	112	P/P	80 - 120
2224365	Thallium	101	96.9	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224054	Chloride	99.8		P	90 - 110
2224149	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224054	Sulfate	100		P	90 - 110
2224149	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223024	Ammonia-N	99.2	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224156	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223651	Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224154	Kjeldahl Nitrogen	90.0	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224157	Kjeldahl Nitrogen	111	102	F/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224056	NO2NO3-N	98.1	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224155	NO2NO3-N	97.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224153	Total-P	109	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224062	O-Phosphate-P	99.1	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224163	O-Phosphate-P	95.9	97.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Batch ID: P393842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224153	Organic Carbon	98.8	98.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P393932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224352	Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224051	Turbidity	0.350	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224149	Turbidity	2.22	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P393556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224365	Barium	1.67	Spike	P	0 - 20
2224365	Calcium	0.175	Spike	P	0 - 20
2224365	Iron	0.271	Spike	P	0 - 20
2224365	Magnesium	0.0693	Spike	P	0 - 20
2224365	Manganese	1.80	Spike	P	0 - 20
2224365	Potassium	0.226	Spike	P	0 - 20
2224365	Sodium	0.503	Spike	P	0 - 20
2224365	Strontium	1.07	Spike	P	0 - 20
2224365	Tin	0.0811	Spike	P	0 - 20
2224365	Titanium	1.62	Spike	P	0 - 20
2224365	Vanadium	1.49	Spike	P	0 - 20
2224365	Zinc	1.63	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224365	Aluminum	4.43	Spike	P	0 - 20
2224365	Antimony	3.77	Spike	P	0 - 20
2224365	Arsenic	3.92	Spike	P	0 - 20
2224365	Beryllium	0.741	Spike	P	0 - 20
2224365	Boron	2.12	Spike	P	0 - 20
2224365	Cadmium	4.23	Spike	P	0 - 20
2224365	Chromium	3.62	Spike	P	0 - 20
2224365	Cobalt	3.62	Spike	P	0 - 20
2224365	Copper	4.02	Spike	P	0 - 20
2224365	Lead	4.54	Spike	P	0 - 20
2224365	Molybdenum	3.34	Spike	P	0 - 20
2224365	Nickel	4.09	Spike	P	0 - 20
2224365	Selenium	1.87	Spike	P	0 - 20
2224365	Silver	0.326	Spike	P	0 - 20
2224365	Thallium	3.89	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224054	Chloride	0.409	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224054	Sulfate	1.50	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223024	Ammonia-N	0.782	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224156	Ammonia-N	0.494	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223651	Kjeldahl Nitrogen	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224154	Kjeldahl Nitrogen	14.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224157	Kjeldahl Nitrogen	5.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224056	NO2NO3-N	0.489	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P393535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224155	NO2NO3-N	0.922	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P393714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224153	Total-P	2.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P393558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224062	O-Phosphate-P	0.469	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P393559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224163	O-Phosphate-P	1.71	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P393562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224051	Color (true)	1.66	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P393563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224372	Color (true)	1.59	Sample	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P394394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224152	Color (true)	1.99	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P393648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224302	Total Alkalinity	0.737	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P393820

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223735	TDS	4.43	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P393821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224396	TDS	1.36	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P393650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224302	Fluoride	0.494	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224153	Organic Carbon	0.106	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P393932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224352	Organic Carbon	0.474	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103486

Included Lab Sample IDs: 2224153, 2224154, 2224155, 2224156, 2224157, 2224158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103496

Included Lab Sample IDs: 2224159, 2224160, 2224161, 2224162, 2224163, 2224164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	98.4	P/P	90 - 110
O-Phosphate-P	99.5	99.5	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103497

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	99.6	P/P	90 - 115
Color (true)	99.6	99.6	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103499

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151, 2224152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103528

Included Lab Sample IDs: 2224153, 2224154, 2224155, 2224156, 2224157, 2224158

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103530

Included Lab Sample IDs: 2224177, 2224178, 2224179, 2224180, 2224181, 2224182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	99.2	P/P	90 - 110
Barium	102	100	P/P	90 - 110
Calcium	95.8	96.5	P/P	90 - 110
Calcium	96.5	95.7	P/P	90 - 110
Iron	94.9	98.1	P/P	90 - 110
Iron	98.1	97.0	P/P	90 - 110
Magnesium	95.9	98.3	P/P	90 - 110
Magnesium	98.3	96.7	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Potassium	96.8	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103530

Included Lab Sample IDs: 2224177, 2224178, 2224179, 2224180, 2224181, 2224182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	97.6	96.2	P/P	90 - 110
Sodium	96.9	96.9	P/P	90 - 110
Sodium	96.9	96.3	P/P	90 - 110
Strontium	100	100	P/P	90 - 110
Strontium	101	100	P/P	90 - 110
Tin	101	99.8	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	99.7	98.8	P/P	90 - 110
Titanium	99.7	99.7	P/P	90 - 110
Vanadium	99.8	98.8	P/P	90 - 110
Vanadium	99.9	99.8	P/P	90 - 110
Zinc	102	100	P/P	90 - 110
Zinc	103	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103534

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151, 2224152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.0	95.8	P/P	90 - 110
Total Alkalinity	98.1	95.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103534

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151, 2224152

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103604

Included Lab Sample IDs: 2224153, 2224154, 2224155, 2224156, 2224157, 2224158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110
Total-P	99.0	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103605

Included Lab Sample IDs: 2224153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103628

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151, 2224152

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103628

Included Lab Sample IDs: 2224147, 2224148, 2224149, 2224150, 2224151, 2224152

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

Reference Method: SM 5310 B-2011

Run ID: A103645

Included Lab Sample IDs: 2224154, 2224155, 2224156, 2224157, 2224158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	93.6	P/P	90 - 110
Organic Carbon	98.3	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103655

Included Lab Sample IDs: 2224153, 2224154, 2224155, 2224156, 2224157, 2224158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	99.4	P/P	90 - 110
Kjeldahl Nitrogen	98.9	96.5	P/P	90 - 110
Kjeldahl Nitrogen	99.0	94.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103671

Included Lab Sample IDs: 2224177, 2224178, 2224179, 2224180, 2224181, 2224182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.0	99.5	P/P	90 - 110
Aluminum	99.5	98.5	P/P	90 - 110
Antimony	94.2	95.0	P/P	90 - 110
Antimony	95.0	94.7	P/P	90 - 110
Arsenic	97.9	98.2	P/P	90 - 110
Arsenic	98.2	97.0	P/P	90 - 110
Beryllium	94.9	94.2	P/P	90 - 110
Beryllium	94.9	94.9	P/P	90 - 110
Boron	100	104	P/P	90 - 110
Boron	104	99.2	P/P	90 - 110
Cadmium	97.5	99.1	P/P	90 - 110
Cadmium	99.1	98.0	P/P	90 - 110
Chromium	95.2	94.9	P/P	90 - 110
Chromium	95.5	95.2	P/P	90 - 110
Cobalt	103	103	P/P	90 - 110
Cobalt	104	103	P/P	90 - 110
Copper	94.9	94.1	P/P	90 - 110
Copper	95.8	94.9	P/P	90 - 110
Lead	104	105	P/P	90 - 110
Lead	105	105	P/P	90 - 110
Molybdenum	96.8	97.6	P/P	90 - 110
Molybdenum	97.6	95.9	P/P	90 - 110
Nickel	95.6	95.1	P/P	90 - 110
Nickel	96.6	95.6	P/P	90 - 110
Selenium	97.8	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103671

Included Lab Sample IDs: 2224177, 2224178, 2224179, 2224180, 2224181, 2224182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	99.2	97.8	P/P	90 - 110
Thallium	101	99.2	P/P	90 - 110
Thallium	98.8	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103714

Included Lab Sample IDs: 2224177, 2224178, 2224179, 2224180, 2224181, 2224182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	107	107	P/P	90 - 110
Silver	107	108	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103846

Included Lab Sample IDs: 2224152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	107	P/P	85 - 115

* 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						0.350	
	Turbidity						2.22	
EPA 200.7 Rev. 4.4	Barium	97.3	100	102	99.9			1.67
	Calcium	99.2	97.3	100				0.175
	Iron	101	104	103	102			0.271
	Magnesium	102	97.4	104	104			0.0693
	Manganese	98.3	102	102	100			1.80
	Potassium	97.3	98.0	97.3	97.6			0.226
	Sodium	98.3	99.7	99.0				0.503
	Strontium	98.0	99.5	101	99.5			1.07
	Tin	95.6	101	97.0	96.9			0.0811
	Titanium	93.1	98.7	101	98.6			1.62
	Vanadium	92.7	99.2	98.1	96.7			1.49
	Zinc	95.4	99.5	100	98.6			1.63
EPA 200.8 Rev. 5.4	Aluminum	102	104	96.4	102			4.43
	Antimony	100	98.1	94.5	99.7			3.77
	Arsenic	101	101	97.2	99.6			3.92
	Beryllium	95.3	89.7	89.0	90.3			0.741
	Boron	99.8	103	100	103			2.12
	Cadmium	96.5	97.2	93.2	96.4			4.23
	Chromium	95.6	95.3	91.8	95.4			3.62
	Cobalt	104	104	100	102			3.62
	Copper	97.1	97.8	93.9	92.9			4.02
	Lead	103	104	99.6	102			4.54
	Molybdenum	95.9	97.6	94.4	96.2			3.34
	Nickel	97.4	95.6	91.7	93.0			4.09
	Selenium	99.6	97.3	95.5	96.3			1.87
	Silver	113	112	112	112			0.326
	Thallium	95.8	101	96.9	96.0			3.89
EPA 300.0 Rev. 2.1	Chloride	100	99.8	101			0.409	
	Sulfate	101	100	103			1.50	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.2	100				0.782
	Ammonia-N	101	101	100				0.494
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	101	104				1.80
	Kjeldahl Nitrogen	94.4	90.0	110				14.0
	Kjeldahl Nitrogen	102	111	102				5.44
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.1	97.6				0.489
	NO2NO3-N	99.0	97.5	96.0				0.922
EPA 365.1 Rev. 2.0	Total-P	105	109	106				2.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	99.1	99.6				0.469
	O-Phosphate-P	98.6	95.9	97.7				1.71
SM 2120 B-2011	Color (true)	99.3					1.66	
	Color (true)	98.1					1.59	
	Color (true)	107					1.99	
SM 2320 B-2011	Total Alkalinity	97.8					0.737	
SM 2540 C-2011	TDS						4.43	
	TDS						1.36	
SM 4500 F-C-2011	Fluoride	98.3						0.494
SM 5310 B-2011	Organic Carbon	96.2	98.8	98.6				0.106
	Organic Carbon	94.8	99.4					0.474

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2224177, 2224178, 2224179, 2224180, 2224181, 2224182
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2224177, 2224178, 2224179, 2224180, 2224181, 2224182
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2224153, 2224154, 2224155, 2224156, 2224157, 2224158
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2224153, 2224154, 2224155, 2224156, 2224157, 2224158
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2224153, 2224154, 2224155, 2224156, 2224157, 2224158
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2224153, 2224154, 2224155, 2224156, 2224157, 2224158
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2224159, 2224160, 2224161, 2224162, 2224163, 2224164
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2224177, 2224178, 2224179, 2224180, 2224181, 2224182
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2224153, 2224154, 2224155, 2224156, 2224157, 2224158

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	02/08/2021			02/09/2021 14:44	Yen Ta	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
EPA 200.7 Rev. 4.4	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 16:45	Betina Topolski	2224177
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 16:50	Betina Topolski	2224178
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 16:56	Betina Topolski	2224179
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 17:02	Betina Topolski	2224180
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 17:36	Betina Topolski	2224181
EPA 200.8 Rev. 5.4	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/10/2021 17:41	Betina Topolski	2224182
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 16:34	Alexander Thompson	2224177
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 16:41	Alexander Thompson	2224178
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 16:49	Alexander Thompson	2224179
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 16:56	Alexander Thompson	2224180
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 17:03	Alexander Thompson	2224181
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/18/2021 17:48	Alexander Thompson	2224182
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:05	Alexander Thompson	2224177
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:09	Alexander Thompson	2224178
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:13	Alexander Thompson	2224179
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:17	Alexander Thompson	2224180
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:21	Alexander Thompson	2224181
	02/08/2021	02/09/2021 16:11	Elliott D. Healy	02/19/2021 15:47	Alexander Thompson	2224182
EPA 300.0 Rev. 2.1	02/08/2021			02/16/2021 00:04	Lipi Saha	2224149
	02/08/2021			02/16/2021 01:53	Lipi Saha	2224147
	02/08/2021			02/16/2021 02:29	Lipi Saha	2224148
	02/08/2021			02/16/2021 02:41	Lipi Saha	2224150
	02/08/2021			02/16/2021 02:53	Lipi Saha	2224151
	02/08/2021			02/16/2021 03:05	Lipi Saha	2224152
EPA 350.1 Rev. 2.0	02/08/2021			02/10/2021 17:01	Ping Hua	2224153
	02/08/2021			02/10/2021 17:03	Ping Hua	2224154
	02/08/2021			02/10/2021 17:13	Ping Hua	2224156
	02/08/2021			02/10/2021 17:18	Ping Hua	2224155
	02/08/2021			02/10/2021 17:19	Ping Hua	2224157
EPA 351.2 Rev. 2.0	02/08/2021			02/10/2021 17:21	Ping Hua	2224158
	02/08/2021	02/16/2021 12:30	Yen Ta	02/17/2021 14:59	Julia Storbeck	2224157
	02/08/2021	02/16/2021 12:31	Yen Ta	02/17/2021 13:27	Julia Storbeck	2224153
	02/08/2021	02/16/2021 12:31	Yen Ta	02/17/2021 13:35	Julia Storbeck	2224154
	02/08/2021	02/16/2021 12:31	Yen Ta	02/17/2021 13:40	Julia Storbeck	2224155
	02/08/2021	02/16/2021 12:31	Yen Ta	02/17/2021 13:41	Julia Storbeck	2224156
EPA 353.2 Rev. 2.0	02/08/2021	02/16/2021 12:31	Yen Ta	02/17/2021 13:43	Julia Storbeck	2224158
	02/08/2021			02/09/2021 10:28	Beverly Y. Sanders	2224153
	02/08/2021			02/09/2021 10:30	Beverly Y. Sanders	2224154

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	02/08/2021			02/09/2021 10:37	Beverly Y. Sanders	2224155
	02/08/2021			02/09/2021 10:43	Beverly Y. Sanders	2224156
	02/08/2021			02/09/2021 10:44	Beverly Y. Sanders	2224157
	02/08/2021			02/09/2021 10:45	Beverly Y. Sanders	2224158
EPA 365.1 Rev. 2.0	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:18	Shengyu Wang	2224153
	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:19	Shengyu Wang	2224154
	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:20	Shengyu Wang	2224155
	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:21	Shengyu Wang	2224156
	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:29	Shengyu Wang	2224157
	02/08/2021	02/12/2021 14:20	Lipi Saha	02/16/2021 11:30	Shengyu Wang	2224158
EPA 365.1 Rev. 2.0 dissolved	02/08/2021			02/09/2021 15:11	Blanca Fach	2224159
	02/08/2021			02/09/2021 15:12	Blanca Fach	2224160
	02/08/2021			02/09/2021 15:15	Blanca Fach	2224163
	02/08/2021			02/09/2021 15:22	Blanca Fach	2224161
	02/08/2021			02/09/2021 15:23	Blanca Fach	2224162
	02/08/2021			02/09/2021 15:24	Blanca Fach	2224164
SM 2120 B-2011	02/08/2021			02/09/2021 15:25	Benjamin T. Nordmann	2224147
	02/08/2021			02/09/2021 15:26	Benjamin T. Nordmann	2224148
	02/08/2021			02/09/2021 15:29	Benjamin T. Nordmann	2224149
	02/08/2021			02/09/2021 15:30	Benjamin T. Nordmann	2224150
	02/08/2021			02/09/2021 15:31	Benjamin T. Nordmann	2224151
	02/08/2021			03/02/2021 17:27	Benjamin T. Nordmann	2224152
SM 2320 B-2011	02/08/2021			02/10/2021 20:06	Dale L. Simmons	2224147
	02/08/2021			02/10/2021 20:16	Dale L. Simmons	2224148
	02/08/2021			02/10/2021 20:25	Dale L. Simmons	2224149
	02/08/2021			02/10/2021 20:36	Dale L. Simmons	2224150
	02/08/2021			02/10/2021 21:28	Dale L. Simmons	2224151
	02/08/2021			02/10/2021 21:39	Dale L. Simmons	2224152
SM 2340B	02/08/2021			02/10/2021 16:45	Betina Topolski	2224177
	02/08/2021			02/10/2021 16:50	Betina Topolski	2224178
	02/08/2021			02/10/2021 16:56	Betina Topolski	2224179
	02/08/2021			02/10/2021 17:02	Betina Topolski	2224180
	02/08/2021			02/10/2021 17:36	Betina Topolski	2224181
	02/08/2021			02/10/2021 17:41	Betina Topolski	2224182
SM 2540 C-2011	02/08/2021			02/10/2021 14:52	Yijie Li	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 2540 D-2011	02/08/2021			02/10/2021 14:52	Yijie Li	2224147, 2224148, 2224149, 2224150, 2224151, 2224152
SM 4500 F-C-2011	02/08/2021			02/10/2021 20:06	Dale L. Simmons	2224147
	02/08/2021			02/10/2021 20:16	Dale L. Simmons	2224148

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	02/08/2021			02/10/2021 20:25	Dale L. Simmons	2224149
	02/08/2021			02/10/2021 20:36	Dale L. Simmons	2224150
	02/08/2021			02/10/2021 21:28	Dale L. Simmons	2224151
	02/08/2021			02/10/2021 21:39	Dale L. Simmons	2224152
SM 5310 B-2011	02/08/2021			02/15/2021 22:56	Touraj Touran	2224153
	02/08/2021			02/16/2021 17:50	Touraj Touran	2224154
	02/08/2021			02/16/2021 18:02	Touraj Touran	2224155
	02/08/2021			02/16/2021 18:41	Touraj Touran	2224156
	02/08/2021			02/16/2021 18:55	Touraj Touran	2224157
	02/08/2021			02/16/2021 19:07	Touraj Touran	2224158