

Chemical Analysis Report

SO-DIST-2020-03-20-01

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

Event Description: **CALOOSA LT**
Request ID: **RQ-2020-03-09-05**
Customer: **SO-DIST**
Project ID: **BMAP**

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FLDEP South District Office
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 16-APR-2020 16:38



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: USGSStation-PuntaBlanca

Collection Date/Time: 03/19/2020 09:45

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167222	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P381413	
	SM 4500 F-C-2011	Fluoride	0.97		mg F/L	P381452	
2167226	SM 5310 B-2011 dissolved	Organic Carbon	6.3		mg C/L	P381175	
2167230	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P381175	
2167234	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P381153	
2167294	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	2.14		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.7	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Sample Location: USGS Station-ShellPoint

Collection Date/Time: 03/19/2020 10:10

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167223	SM 2320 B-2011	Total Alkalinity	129		mg CaCO3/L	P381413	
	SM 4500 F-C-2011	Fluoride	0.97		mg F/L	P381452	
2167227	SM 5310 B-2011 dissolved	Organic Carbon	6.2		mg C/L	P381175	
2167231	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	6.1		mg C/L	P381175	
2167235	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P381153	
2167295	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	2.10		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.6	U	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Sample Location: Marker # 76

Collection Date/Time: 03/19/2020 10:40

Field ID: G3SD0110

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167224	SM 2320 B-2011	Total Alkalinity	128		mg CaCO3/L	P381413	
	SM 4500 F-C-2011	Fluoride	0.77		mg F/L	P381452	
2167228	SM 5310 B-2011 dissolved	Organic Carbon	8.1		mg C/L	P381175	
2167232	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	8.3		mg C/L	P381175	
2167236	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P381153	
2167296	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	2.06		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.7	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Sample Location: Marker # 52

Collection Date/Time: 03/19/2020 11:15

Field ID: G3SD0111

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167225	SM 2320 B-2011	Total Alkalinity	127		mg CaCO3/L	P381659	
	SM 4500 F-C-2011	Fluoride	0.54		mg F/L	P381452	
2167229	SM 5310 B-2011 dissolved	Organic Carbon	11		mg C/L	P381175	
2167233	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P381175	
2167237	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P381153	
2167297	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.92		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	2.0	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Sample Location: US 41, Marker # 38

Collection Date/Time: 03/19/2020 11:35

Field ID: G3SD0112

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167238	SM 5310 B-2011 dissolved	Organic Carbon	12		mg C/L	P381175	
2167246	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P381175	
2167254	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P381153	
2167298	EPA 200.7 Rev. 4.4	Calcium	170		mg/L	P381283	
		Iron	90	U	ug/L	P381283	
		Magnesium	435		mg/L	P381283	
		Potassium	138		mg/L	P381283	
		Sodium	3.57E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	2.09		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	3.4		ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Marker # 28

Collection Date/Time: 03/19/2020 11:50

Field ID: G3SD0113

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167239	SM 5310 B-2011 dissolved	Organic Carbon	13		mg C/L	P381173	
2167247	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P381173	
2167255	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054		mg P/L	P381153	
2167299	EPA 200.7 Rev. 4.4	Calcium	140		mg/L	P381283	
		Iron	90	U	ug/L	P381283	
		Magnesium	312		mg/L	P381283	
		Potassium	97		mg/L	P381283	
		Sodium	2.50E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.97		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	2.0	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Marker # 22

Collection Date/Time: 03/19/2020 12:05

Field ID: G3SD0114

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167240	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P381173	
2167248	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381390	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167256	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P381153	
2167300	EPA 200.7 Rev. 4.4	Calcium	132		mg/L	P381283	
		Iron	95	I	ug/L	P381283	
		Magnesium	277		mg/L	P381283	
		Potassium	83		mg/L	P381283	
		Sodium	2.13E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.94		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.8	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Old Swing Bridge

Collection Date/Time: 03/19/2020 12:15

Field ID: G3SD0115

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167241	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P381173	
2167249	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P381391	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P381338	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167257	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P381153	
2167301	EPA 200.7 Rev. 4.4	Calcium	113		mg/L	P381283	
		Iron	90	I	ug/L	P381283	
		Magnesium	207		mg/L	P381283	
		Potassium	70		mg/L	P381283	
		Sodium	1.78E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.85		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.7	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: MidChannel@OrangeRiver

Collection Date/Time: 03/19/2020 12:35

Field ID: G3SD0116

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167242	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P381173	
2167250	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P381426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P381380	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P381391	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P381355	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167258	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P381153	
2167302	EPA 200.7 Rev. 4.4	Calcium	115		mg/L	P381283	
		Iron	90	U	ug/L	P381283	
		Magnesium	210		mg/L	P381283	
		Potassium	70		mg/L	P381283	
		Sodium	1.78E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.78		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.7	I	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Upstream of Power Plant

Collection Date/Time: 03/19/2020 12:55

Field ID: G3SD0117

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167243	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P381173	
2167251	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P381428	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P381381	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P381391	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P381355	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167259	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P381153	
2167303	EPA 200.7 Rev. 4.4	Calcium	107		mg/L	P381294	
		Iron	92	I	ug/L	P381294	
		Magnesium	203		mg/L	P381294	
		Potassium	65		mg/L	P381294	
		Sodium	1.65E+03		mg/L	P381294	
		Zinc	5.0	U	ug/L	P381294	
	EPA 200.8 Rev. 5.4	Arsenic	1.73		ug/L	P381294	
		Cadmium	0.020	U	ug/L	P381294	
		Chromium	0.40	U	ug/L	P381294	
		Copper	1.53		ug/L	P381294	
		Lead	0.20	U	ug/L	P381294	
		Nickel	0.71	I	ug/L	P381294	
		Silver	0.010	U	ug/L	P381294	

Sample Location: Mid Channel off Oxbow

Collection Date/Time: 03/19/2020 13:15

Field ID: G3SD0118

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167244	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P381173	
2167252	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P381428	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P381381	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P381391	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P381355	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167260	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P381152	
2167304	EPA 200.7 Rev. 4.4	Calcium	118		mg/L	P381283	
		Iron	90	U	ug/L	P381283	
		Magnesium	231		mg/L	P381283	
		Potassium	71		mg/L	P381283	
		Sodium	1.83E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.84		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.6	U	ug/L	P381283	
		Lead	0.80	U	ug/L	P381283	
		Nickel	2.0	U	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Mid channel off point

Collection Date/Time: 03/19/2020 13:25

Field ID: G3SD0119

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167245	SM 5310 B-2011 dissolved	Organic Carbon	13		mg C/L	P381173	
2167253	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P381428	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P381381	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P381391	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P381355	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P381173	
2167261	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P381152	
2167305	EPA 200.7 Rev. 4.4	Calcium	122		mg/L	P381283	
		Iron	100	I	ug/L	P381283	
		Magnesium	236		mg/L	P381283	
		Potassium	78		mg/L	P381283	
		Sodium	1.93E+03		mg/L	P381283	
		Zinc	15	U	ug/L	P381283	
	EPA 200.8 Rev. 5.4	Arsenic	1.93		ug/L	P381283	
		Cadmium	0.080	U	ug/L	P381283	
		Chromium	1.6	U	ug/L	P381283	
		Copper	1.6	U	ug/L	P381972	
		Lead	0.80	U	ug/L	P381283	
		Nickel	3.2	I	ug/L	P381283	
		Silver	0.040	U	ug/L	P381283	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381283

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381283

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381972

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381426

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381426

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381428

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381380

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381381

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381390

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381391

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381338

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381355

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381152

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: P381153

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

Reference Method: SM 2320 B-2011
Batch ID: P381413

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

Reference Method: SM 2320 B-2011
Batch ID: P381659

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

Reference Method: SM 4500 F-C-2011
Batch ID: P381452

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P381173

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

Reference Method: SM 5310 B-2011
Batch ID: P381175

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381173

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381175

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: P381283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	101		P	85 - 115
Sodium	104		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	108		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	103		P	85 - 115
Sodium	99.2		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	103		P	85 - 115
Copper	105		P	85 - 115
Lead	102		P	85 - 115
Nickel	93.9		P	85 - 115
Silver	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	104		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	107		P	85 - 115
Copper	104		P	85 - 115
Lead	99.3		P	85 - 115
Nickel	104		P	85 - 115
Silver	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	102		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381426

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381428

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381380

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381381

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381390

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381391

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381338

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: P381355

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: P381152

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	92.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	94.7		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P381413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 2320 B-2011
Batch ID: P381659

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P381452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 104

Reference Method: SM 5310 B-2011
Batch ID: P381173

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

Reference Method: SM 5310 B-2011
Batch ID: P381175

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381173

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381175

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P381283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167301	Iron	99.8		P	70 - 130
2167301	Zinc	102		P	70 - 130
2167302	Iron	108	102	P/P	70 - 130
2167302	Zinc	109	104	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P381294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167144	Calcium	102		P	80 - 120
2167144	Iron	104	106	P/P	80 - 120
2167144	Magnesium	102	104	P/P	80 - 120
2167144	Potassium	104	103	P/P	80 - 120
2167144	Sodium	108	104	P/P	80 - 120
2167144	Zinc	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P381283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167301	Arsenic	105		P	70 - 130
2167301	Cadmium	94.2		P	70 - 130
2167301	Chromium	104		P	70 - 130
2167301	Copper	107		P	70 - 130
2167301	Lead	106		P	70 - 130
2167301	Nickel	103		P	70 - 130
2167301	Silver	99.4		P	70 - 130
2167302	Arsenic	107	104	P/P	70 - 130
2167302	Cadmium	93.8	94.6	P/P	70 - 130
2167302	Chromium	103	101	P/P	70 - 130
2167302	Copper	108	103	P/P	70 - 130
2167302	Lead	106	104	P/P	70 - 130
2167302	Nickel	107	106	P/P	70 - 130
2167302	Silver	101	99.1	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P381294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167144	Arsenic	103	99.6	P/P	80 - 120
2167144	Cadmium	101	98.8	P/P	80 - 120
2167144	Chromium	105	102	P/P	80 - 120
2167144	Copper	102	101	P/P	80 - 120
2167144	Lead	95.1	93.5	P/P	80 - 120
2167144	Nickel	102	101	P/P	80 - 120
2167144	Silver	102	99.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P381972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167305	Copper	111	110	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P381426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167073	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P381428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167403	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P381380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167232	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P381381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167399	Kjeldahl Nitrogen	109	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164597	NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P381391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167249	NO2NO3-N	97.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P381338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167230	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P381355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167075	Total-P	99.1	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P381152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167260	O-Phosphate-P	91.0	92.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167234	O-Phosphate-P	90.7	93.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P381452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2165407	Fluoride	98.4	101	P/P	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P381173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167126	Organic Carbon	100	99.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P381175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167231	Organic Carbon	94.2	93.7	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167126	Organic Carbon	100	99.1	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167231	Organic Carbon	94.2	93.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167302	Calcium	2.00	Spike	P	0 - 20
2167302	Iron	5.14	Spike	P	0 - 20
2167302	Magnesium	1.93	Spike	P	0 - 20
2167302	Potassium	2.22	Spike	P	0 - 20
2167302	Sodium	2.17	Spike	P	0 - 20
2167302	Zinc	4.85	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P381294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167144	Calcium	1.20	Spike	P	0 - 20
2167144	Iron	1.75	Spike	P	0 - 20
2167144	Magnesium	1.87	Spike	P	0 - 20
2167144	Potassium	0.636	Spike	P	0 - 20
2167144	Sodium	2.90	Spike	P	0 - 20
2167144	Zinc	2.14	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167302	Arsenic	3.04	Spike	P	0 - 20
2167302	Cadmium	0.887	Spike	P	0 - 20
2167302	Chromium	2.05	Spike	P	0 - 20
2167302	Copper	4.04	Spike	P	0 - 20
2167302	Lead	2.37	Spike	P	0 - 20
2167302	Nickel	0.871	Spike	P	0 - 20
2167302	Silver	2.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167144	Arsenic	3.46	Spike	P	0 - 20
2167144	Cadmium	2.28	Spike	P	0 - 20
2167144	Chromium	2.72	Spike	P	0 - 20
2167144	Copper	1.59	Spike	P	0 - 20
2167144	Lead	1.63	Spike	P	0 - 20
2167144	Nickel	1.55	Spike	P	0 - 20
2167144	Silver	1.88	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P381972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167305	Copper	0.882	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167073	Ammonia-N	0.422	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P381428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167403	Ammonia-N	2.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167232	Kjeldahl Nitrogen	0.702	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P381381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167399	Kjeldahl Nitrogen	4.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164597	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167249	NO2NO3-N	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167230	Total-P	0.381	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P381355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167075	Total-P	0.629	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167260	O-Phosphate-P	0.674	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P381153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167234	O-Phosphate-P	2.40	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P381413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166937	Total Alkalinity	0.0452	Sample	P	0 - 3.3

Reference Method: SM 2320 B-2011
Batch ID: P381659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2168652	Total Alkalinity	0.299	Sample	P	0 - 3.3

Reference Method: SM 4500 F-C-2011
Batch ID: P381452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2165407	Fluoride	1.47	Spike	P	0 - 2.0

Reference Method: SM 5310 B-2011
Batch ID: P381173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167126	Organic Carbon	0.854	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P381175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167231	Organic Carbon	0.503	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167126	Organic Carbon	0.854	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P381175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167231	Organic Carbon	0.503	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98383

Included Lab Sample IDs: 2167234, 2167235, 2167236, 2167237, 2167254, 2167255, 2167256, 2167257, 2167258, 2167259, 2167260, 2167261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.6	95.1	P/P	90 - 110
O-Phosphate-P	95.0	94.6	P/P	90 - 110
O-Phosphate-P	95.1	94.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A98395

Included Lab Sample IDs: 2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.9	P/P	90 - 110
Organic Carbon	93.2	101	P/P	90 - 110
Organic Carbon	97.0	93.2	P/P	90 - 110
Organic Carbon	99.9	101	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A98395

Included Lab Sample IDs: 2167226, 2167227, 2167228, 2167229, 2167238, 2167239, 2167240, 2167241, 2167242, 2167243, 2167244, 2167245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.9	P/P	90 - 110
Organic Carbon	93.2	101	P/P	90 - 110
Organic Carbon	97.0	93.2	P/P	90 - 110
Organic Carbon	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98480

Included Lab Sample IDs: 2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	97.5	P/P	90 - 110
Total-P	97.5	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98485

Included Lab Sample IDs: 2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98490

Included Lab Sample IDs: 2167222, 2167223, 2167224

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98491

Included Lab Sample IDs: 2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110
Ammonia-N	101	99.4	P/P	90 - 110
Ammonia-N	103	100	P/P	90 - 110
Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98495

Included Lab Sample IDs: 2167222, 2167223, 2167224, 2167225

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98497

Included Lab Sample IDs: 2167303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	103	P/P	90 - 110
Cadmium	100	99.3	P/P	90 - 110
Chromium	100	104	P/P	90 - 110
Copper	100	108	P/P	90 - 110
Lead	96.6	96.8	P/P	90 - 110
Nickel	101	109	P/P	90 - 110
Silver	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98506

Included Lab Sample IDs: 2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	96.8	P/P	90 - 110
Kjeldahl Nitrogen	96.8	98.6	P/P	90 - 110
Kjeldahl Nitrogen	98.6	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98543

Included Lab Sample IDs: 2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167303, 2167304, 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	99.9	P/P	90 - 110
Calcium	103	101	P/P	90 - 110
Calcium	97.7	103	P/P	90 - 110
Calcium	98.5	97.7	P/P	90 - 110
Calcium	99.9	98.5	P/P	90 - 110
Iron	101	99.1	P/P	90 - 110
Iron	103	101	P/P	90 - 110
Iron	104	102	P/P	90 - 110
Iron	98.5	104	P/P	90 - 110
Iron	99.1	98.5	P/P	90 - 110
Magnesium	101	99.5	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98543

Included Lab Sample IDs: 2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167303, 2167304, 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	97.2	102	P/P	90 - 110
Magnesium	98.2	97.2	P/P	90 - 110
Magnesium	99.5	98.2	P/P	90 - 110
Potassium	101	99.2	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Potassium	103	105	P/P	90 - 110
Potassium	98.2	103	P/P	90 - 110
Potassium	99.2	98.2	P/P	90 - 110
Sodium	101	99.8	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Sodium	104	102	P/P	90 - 110
Sodium	99.8	104	P/P	90 - 110
Zinc	101	99.2	P/P	90 - 110
Zinc	101	101	P/P	90 - 110
Zinc	101	100	P/P	90 - 110
Zinc	98.9	101	P/P	90 - 110
Zinc	99.2	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98581

Included Lab Sample IDs: 2167225

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98592

Included Lab Sample IDs: 2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167304, 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	104	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Cadmium	101	104	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Chromium	100	99.3	P/P	90 - 110
Chromium	98.3	98.3	P/P	90 - 110
Copper	102	104	P/P	90 - 110
Copper	103	106	P/P	90 - 110
Lead	99.5	99.7	P/P	90 - 110
Lead	99.7	99.4	P/P	90 - 110
Silver	103	105	P/P	90 - 110
Silver	103	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98596

Included Lab Sample IDs: 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	102	104	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98597

Included Lab Sample IDs: 2167251, 2167252

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98608

Included Lab Sample IDs: 2167250, 2167253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.8	P/P	90 - 110
Total-P	99.2	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98631

Included Lab Sample IDs: 2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167304, 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	105	104	P/P	90 - 110
Nickel	96.7	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98772

Included Lab Sample IDs: 2167305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	101	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 200.7 Rev. 4.4	Calcium	102						2.00
	Calcium	103		102				1.20
	Iron	104	99.8	108	102			5.14
	Iron	108	104	106				1.75
	Magnesium	101						1.93
	Magnesium	108	102	104				1.87
	Potassium	101						2.22
	Potassium	103	104	103				0.636
	Sodium	104						2.17
	Sodium	99.2	108	104				2.90
	Zinc	105	102	109	104			4.85
	Zinc	104	104	102				2.14
EPA 200.8 Rev. 5.4	Arsenic	105	107	104	105			3.04
	Arsenic	104	103	99.6				3.46
	Cadmium	101	93.8	94.6	94.2			0.887
	Cadmium	104	101	98.8				2.28
	Chromium	103	103	101	104			2.05
	Chromium	107	105	102				2.72
	Copper	105	108	103	107			4.04
	Copper	104	102	101				1.59
	Copper	102	111	110				0.882
	Lead	102	106	104	106			2.37
	Lead	99.3	95.1	93.5				1.63
	Nickel	93.9	107	106	103			0.871
	Nickel	104	102	101				1.55
	Silver	106	101	99.1	99.4			2.17
	Silver	106	102	99.9				1.88
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	103	103				0.422
	Ammonia-N	100	103	101				2.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	103	102				0.702
	Kjeldahl Nitrogen	105	109	103				4.52
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.5	99.0				0.504
	NO2NO3-N	99.5	97.4	98.8				1.39
EPA 365.1 Rev. 2.0	Total-P	106	101	101				0.381
	Total-P	105	99.1	98.4				0.629
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	92.6	91.0	92.0				0.674
	O-Phosphate-P	94.7	90.7	93.6				2.40
SM 2320 B-2011	Total Alkalinity	104					0.0452	
	Total Alkalinity	101					0.299	
SM 4500 F-C-2011	Fluoride	98.3	98.4	101				1.47
SM 5310 B-2011	Organic Carbon	99.4	100	99.1				0.854
	Organic Carbon	95.8	94.2	93.7				0.503
SM 5310 B-2011 dissolved	Organic Carbon	99.4	100	99.1				0.854
	Organic Carbon	95.8	94.2	93.7				0.503

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167303, 2167304, 2167305

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2167294, 2167295, 2167296, 2167297, 2167298, 2167299, 2167300, 2167301, 2167302, 2167303, 2167304, 2167305
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2167234, 2167235, 2167236, 2167237, 2167254, 2167255, 2167256, 2167257, 2167258, 2167259, 2167260, 2167261
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2167222, 2167223, 2167224, 2167225
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2167222, 2167223, 2167224, 2167225
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2167230, 2167231, 2167232, 2167233, 2167246, 2167247, 2167248, 2167249, 2167250, 2167251, 2167252, 2167253
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2167226, 2167227, 2167228, 2167229, 2167238, 2167239, 2167240, 2167241, 2167242, 2167243, 2167244, 2167245

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 16:51	Vijayalakshmi Reddy	2167294
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 16:59	Vijayalakshmi Reddy	2167295
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 17:07	Vijayalakshmi Reddy	2167296
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 17:15	Vijayalakshmi Reddy	2167297
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 17:23	Vijayalakshmi Reddy	2167298
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 17:31	Vijayalakshmi Reddy	2167298
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 18:07	Vijayalakshmi Reddy	2167299
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 18:15	Vijayalakshmi Reddy	2167299
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 18:23	Vijayalakshmi Reddy	2167300
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 18:31	Vijayalakshmi Reddy	2167300
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 18:39	Vijayalakshmi Reddy	2167301
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 19:03	Vijayalakshmi Reddy	2167301
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 19:54	Vijayalakshmi Reddy	2167302
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 20:26	Vijayalakshmi Reddy	2167302
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 20:57	Vijayalakshmi Reddy	2167304
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 21:05	Vijayalakshmi Reddy	2167304
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 21:41	Vijayalakshmi Reddy	2167305
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	03/30/2020 21:49	Vijayalakshmi Reddy	2167305
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 10:32	Betina Topolski	2167305
	03/20/2020	03/25/2020 17:30	Elliott D. Healy	03/30/2020 15:32	Vijayalakshmi Reddy	2167303
	03/20/2020	03/25/2020 17:30	Elliott D. Healy	03/30/2020 15:40	Vijayalakshmi Reddy	2167303
EPA 200.8 Rev. 5.4	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 14:52	Justin Cutchin	2167302
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 15:26	Justin Cutchin	2167301
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 18:56	Justin Cutchin	2167294
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:03	Justin Cutchin	2167295
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:10	Justin Cutchin	2167296
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:16	Justin Cutchin	2167297
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:23	Justin Cutchin	2167298
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:30	Justin Cutchin	2167299
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:37	Justin Cutchin	2167300
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:43	Justin Cutchin	2167304
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/01/2020 19:50	Justin Cutchin	2167305
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 17:47	Justin Cutchin	2167302
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 18:21	Justin Cutchin	2167301
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 21:50	Justin Cutchin	2167294
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 21:57	Justin Cutchin	2167295
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:04	Justin Cutchin	2167296
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:11	Justin Cutchin	2167297
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:17	Justin Cutchin	2167298
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:24	Justin Cutchin	2167299

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.8 Rev. 5.4	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:31	Justin Cutchin	2167300
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:38	Justin Cutchin	2167304
	03/20/2020	03/25/2020 14:30	Elliott D. Healy	04/02/2020 22:45	Justin Cutchin	2167305
	03/20/2020	03/25/2020 17:30	Elliott D. Healy	03/27/2020 17:01	Justin Cutchin	2167303
	03/20/2020	04/09/2020 15:00	Alexander Thompson	04/14/2020 19:39	Alexander Thompson	2167305
EPA 350.1 Rev. 2.0	03/20/2020			03/28/2020 12:33	Ping Hua	2167230
	03/20/2020			03/28/2020 12:35	Ping Hua	2167231
	03/20/2020			03/28/2020 12:36	Ping Hua	2167232
	03/20/2020			03/28/2020 12:38	Ping Hua	2167233
	03/20/2020			03/28/2020 12:39	Ping Hua	2167246
	03/20/2020			03/28/2020 12:47	Ping Hua	2167247
	03/20/2020			03/28/2020 12:48	Ping Hua	2167248
	03/20/2020			03/28/2020 12:50	Ping Hua	2167249
	03/20/2020			03/28/2020 12:51	Ping Hua	2167250
	03/20/2020			03/28/2020 15:33	Ping Hua	2167251
	03/20/2020			03/28/2020 15:35	Ping Hua	2167252
	03/20/2020			03/28/2020 15:42	Ping Hua	2167253
EPA 351.2 Rev. 2.0	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:16	Jhamieka S. Greenwood	2167232
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:25	Jhamieka S. Greenwood	2167230
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:27	Jhamieka S. Greenwood	2167231
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:28	Jhamieka S. Greenwood	2167233
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:30	Jhamieka S. Greenwood	2167246
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:32	Jhamieka S. Greenwood	2167247
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:33	Jhamieka S. Greenwood	2167248
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:35	Jhamieka S. Greenwood	2167249
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:40	Jhamieka S. Greenwood	2167250
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:49	Jhamieka S. Greenwood	2167251
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:51	Jhamieka S. Greenwood	2167252
	03/20/2020	03/27/2020 09:45	Sima Feizi	03/30/2020 08:52	Jhamieka S. Greenwood	2167253
	03/20/2020			03/27/2020 11:37	Beverly Y. Sanders	2167230
EPA 353.2 Rev. 2.0	03/20/2020			03/27/2020 11:38	Beverly Y. Sanders	2167231
	03/20/2020			03/27/2020 11:39	Beverly Y. Sanders	2167232
	03/20/2020			03/27/2020 11:40	Beverly Y. Sanders	2167233
	03/20/2020			03/27/2020 11:41	Beverly Y. Sanders	2167246
	03/20/2020			03/27/2020 11:42	Beverly Y. Sanders	2167247
	03/20/2020			03/27/2020 11:44	Beverly Y. Sanders	2167248
	03/20/2020			03/27/2020 11:51	Beverly Y. Sanders	2167249
	03/20/2020			03/27/2020 11:57	Beverly Y. Sanders	2167250
	03/20/2020			03/27/2020 11:58	Beverly Y. Sanders	2167251
	03/20/2020			03/27/2020 11:59	Beverly Y. Sanders	2167252

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	03/20/2020			03/27/2020 12:00	Beverly Y. Sanders	2167253
EPA 365.1 Rev. 2.0	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 10:59	Lipi Saha	2167230
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:01	Lipi Saha	2167231
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:08	Lipi Saha	2167232
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:09	Lipi Saha	2167233
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:10	Lipi Saha	2167246
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:11	Lipi Saha	2167247
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:12	Lipi Saha	2167248
	03/20/2020	03/26/2020 12:10	Lipi Saha	03/27/2020 11:13	Lipi Saha	2167249
	03/20/2020	03/26/2020 17:15	Yen Ta	04/01/2020 14:58	Benjamin T. Nordmann	2167251
	03/20/2020	03/26/2020 17:15	Yen Ta	04/01/2020 15:01	Benjamin T. Nordmann	2167252
	03/20/2020	03/26/2020 17:15	Yen Ta	04/01/2020 18:13	Benjamin T. Nordmann	2167253
	03/20/2020	03/26/2020 17:15	Yen Ta	04/01/2020 19:00	Benjamin T. Nordmann	2167250
EPA 365.1 Rev. 2.0 dissolved	03/20/2020			03/20/2020 20:41	Carlos Miranda	2167260
	03/20/2020			03/20/2020 20:44	Carlos Miranda	2167261
	03/20/2020			03/20/2020 20:51	Carlos Miranda	2167234
	03/20/2020			03/20/2020 20:54	Carlos Miranda	2167235
	03/20/2020			03/20/2020 20:55	Carlos Miranda	2167236
	03/20/2020			03/20/2020 20:56	Carlos Miranda	2167237, 2167254
	03/20/2020			03/20/2020 20:57	Carlos Miranda	2167255
	03/20/2020			03/20/2020 20:58	Carlos Miranda	2167256
	03/20/2020			03/20/2020 20:59	Carlos Miranda	2167257
	03/20/2020			03/20/2020 21:04	Carlos Miranda	2167258
	03/20/2020			03/20/2020 21:05	Carlos Miranda	2167259
SM 2320 B-2011	03/20/2020			03/27/2020 14:39	Dale L. Simmons	2167222
	03/20/2020			03/27/2020 14:48	Dale L. Simmons	2167223
	03/20/2020			03/27/2020 14:58	Dale L. Simmons	2167224
	03/20/2020			04/01/2020 12:14	Dale L. Simmons	2167225
SM 4500 F-C-2011	03/20/2020			03/27/2020 16:56	Dale L. Simmons	2167222
	03/20/2020			03/27/2020 17:01	Dale L. Simmons	2167223
	03/20/2020			03/27/2020 17:06	Dale L. Simmons	2167224
	03/20/2020			03/27/2020 17:11	Dale L. Simmons	2167225
SM 5310 B-2011	03/20/2020			03/23/2020 22:02	Lauren Lees	2167247
	03/20/2020			03/23/2020 22:34	Lauren Lees	2167248
	03/20/2020			03/23/2020 23:00	Lauren Lees	2167249
	03/20/2020			03/23/2020 23:26	Lauren Lees	2167250
	03/20/2020			03/24/2020 00:17	Lauren Lees	2167251
	03/20/2020			03/24/2020 00:43	Lauren Lees	2167252
	03/20/2020			03/24/2020 01:09	Lauren Lees	2167253
	03/20/2020			03/24/2020 05:41	Lauren Lees	2167231

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/20/2020			03/24/2020 06:41	Lauren Lees	2167230
	03/20/2020			03/24/2020 07:20	Lauren Lees	2167232
	03/20/2020			03/24/2020 08:21	Lauren Lees	2167233
	03/20/2020			03/24/2020 09:04	Lauren Lees	2167246
SM 5310 B-2011 dissolved	03/20/2020			03/23/2020 22:20	Lauren Lees	2167239
	03/20/2020			03/23/2020 22:47	Lauren Lees	2167240
	03/20/2020			03/23/2020 23:13	Lauren Lees	2167241
	03/20/2020			03/23/2020 23:39	Lauren Lees	2167242
	03/20/2020			03/24/2020 00:30	Lauren Lees	2167243
	03/20/2020			03/24/2020 00:56	Lauren Lees	2167244
	03/20/2020			03/24/2020 01:22	Lauren Lees	2167245
	03/20/2020			03/24/2020 06:27	Lauren Lees	2167227
	03/20/2020			03/24/2020 07:05	Lauren Lees	2167226
	03/20/2020			03/24/2020 07:34	Lauren Lees	2167228
	03/20/2020			03/24/2020 08:37	Lauren Lees	2167229
	03/20/2020			03/24/2020 09:19	Lauren Lees	2167238