

Chemical Analysis Report

SO-DIST-2019-03-15-02

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-2019-03-11-06**
Customer: **SO-DIST**
Project ID: **BMAP**

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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Date Certified: 05-APR-2019 16:21



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: PUNTA BLANCA

Collection Date/Time: 03/14/2019 10:00

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070646	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P360802	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P360805	
2070650	SM 5310 B-00 dissolved	Organic Carbon	7.9		mg C/L	P361056	
2070654	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P360872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P361056	
2070658	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P360530	
2070720	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P360794	
		Zinc	15	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Arsenic	2.07		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	

Sample Location: USGS SHELL POINT

Collection Date/Time: 03/14/2019 10:25

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070647	SM 2320 B-97	Total Alkalinity	127		mg CaCO3/L	P360802	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P360805	
2070651	SM 5310 B-00 dissolved	Organic Carbon	4.9		mg C/L	P361056	
2070655	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P361068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P360872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P361056	
2070659	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P360530	
2070721	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P360794	
		Zinc	20	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Arsenic	2.14		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	

Sample Location: MARKER 76

Collection Date/Time: 03/14/2019 10:45

Field ID: G3SD0110

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070648	SM 2320 B-97	Total Alkalinity	139		mg CaCO3/L	P360802	
	SM 4500 F-C-97	Fluoride	0.59		mg F/L	P360805	
2070652	SM 5310 B-00 dissolved	Organic Carbon	11		mg C/L	P360967	
2070656	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P361068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P360872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P360967	
2070660	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P360530	
2070722	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P360794	
		Zinc	15	U	ug/L	P360794	
	EPA 200.8 Rev. 5.4	Arsenic	1.99		ug/L	P360794	
		Cadmium	0.080	U	ug/L	P360794	
		Chromium	4.0	U	ug/L	P360794	
		Copper	1.6	U	ug/L	P360794	
		Lead	2.0	U	ug/L	P360794	
		Nickel	2.0	U	ug/L	P360794	
		Silver	0.040	U	ug/L	P360794	

Sample Location: MARKER 52

Collection Date/Time: 03/14/2019 11:15

Field ID: G3SD0111

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070649	SM 2320 B-97	Total Alkalinity	144		mg CaCO3/L	P361241	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P361245	
2070653	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P361054	
2070657	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P361068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P360872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P360899	
2070661	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P360530	
2070723	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.70		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	1.48		ug/L	P360716	
		Lead	0.60	U	ug/L	P360716	
		Nickel	0.59	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: MARKER 38

Collection Date/Time: 03/14/2019 11:40

Field ID: G3SD0112

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070662	SM 5310 B-00 dissolved	Organic Carbon	15		mg C/L	P360899	
2070670	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P361068	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P360872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P360899	
2070678	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P360530	
2070724	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.69		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	1.33		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.55	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: MARKER 28

Collection Date/Time: 03/14/2019 11:50

Field ID: G3SD0113

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070663	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P360899	
2070671	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P361065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P360875	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361054	
2070679	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P360533	
2070725	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.67		ug/L	P360716	
		Cadmium	0.036	I	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	1.21		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.59	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: MARKER 22

Collection Date/Time: 03/14/2019 12:05

Field ID: G3SD0114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070664	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P360899	
2070672	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P361065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P360875	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361054	
2070680	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P360533	
2070726	EPA 200.7 Rev. 4.4	Iron	150		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.70		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	1.17		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.58	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: OLD SWING BRIDGE

Collection Date/Time: 03/14/2019 12:20

Field ID: G3SD0115

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070665	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P360899	
2070673	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P361066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P360875	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361054	
2070681	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P360533	
2070727	EPA 200.7 Rev. 4.4	Iron	180		ug/L	P360716	
		Zinc	41		ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.49		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	1.54		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	6.3		ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: ORANGE RIVER

Collection Date/Time: 03/14/2019 12:35

Field ID: G3SD0116

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070666	SM 5310 B-00 dissolved	Organic Carbon	15		mg C/L	P360899	
2070674	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P361066	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P360876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P361054	
2070682	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P360533	
2070728	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.52		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	0.93		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.53	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: POWER PLANT

Collection Date/Time: 03/14/2019 13:00

Field ID: G3SD0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070667	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P360899	
2070675	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P360676	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P360876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361054	
2070683	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.094		mg P/L	P360533	
2070729	EPA 200.7 Rev. 4.4	Iron	160		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.42		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	0.92		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.50	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: CHANNEL OFF OXBOW

Collection Date/Time: 03/14/2019 13:15

Field ID: G3SD0118

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070668	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P360899	
2070676	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P360676	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P360876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P360989	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361054	
2070684	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.050		mg P/L	P360533	
2070730	EPA 200.7 Rev. 4.4	Iron	140		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.44		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	0.82		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.50	I	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Sample Location: CHANNEL OFF POINT

Collection Date/Time: 03/14/2019 13:25

Field ID: G3SD0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070669	SM 5310 B-00 dissolved	Organic Carbon	16		mg C/L	P361054	
2070677	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P360676	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P360876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P360784	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P360989	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P361054	
2070685	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P360533	
2070731	EPA 200.7 Rev. 4.4	Iron	170		ug/L	P360716	
		Zinc	5.0	U	ug/L	P360716	
	EPA 200.8 Rev. 5.4	Arsenic	1.44		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	0.81		ug/L	P360716	
		Lead	0.20	U	ug/L	P360716	
		Nickel	0.50	U	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

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: P360794

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 350.1 Rev. 2.0
Batch ID: P360669

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360676

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361066

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361068

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360872

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360876

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360784

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360989

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
Batch ID: P360992

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360533

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

Reference Method: SM 2320 B-97
Batch ID: P360802

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

Reference Method: SM 2320 B-97
Batch ID: P361241

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

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360899

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

Reference Method: SM 5310 B-00
Batch ID: P360967

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

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P361054

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

Reference Method: SM 5310 B-00
Batch ID: P361056

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360899

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360967

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361054

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361056

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: P360716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Zinc	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.9		P	85 - 115
Cadmium	93.0		P	85 - 115
Chromium	89.2		P	85 - 115
Copper	97.2		P	85 - 115
Lead	91.1		P	85 - 115
Nickel	101		P	85 - 115
Silver	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	99.4		P	85 - 115
Copper	97.3		P	85 - 115
Lead	95.2		P	85 - 115
Nickel	99.0		P	85 - 115
Silver	100		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360676

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361066

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361068

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: P360872

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: P360875

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360876

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: P360784

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360992

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360533

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

Reference Method: SM 2320 B-97
Batch ID: P360802

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P361241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360899

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

Reference Method: SM 5310 B-00
Batch ID: P360967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360899

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P360716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070603	Iron	105	107	P/P	80 - 120
2070603	Zinc	99.4	98.0	P/P	80 - 120
2070729	Iron	105		P	80 - 120
2070729	Zinc	101		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P360794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070721	Iron	100	99.6	P/P	80 - 120
2070721	Zinc	95.2	96.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P360716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070603	Arsenic	95.8	96.1	P/P	80 - 120
2070603	Cadmium	94.5	94.9	P/P	80 - 120
2070603	Chromium	89.1	88.9	P/P	80 - 120
2070603	Copper	97.1	95.8	P/P	80 - 120
2070603	Lead	92.6	92.6	P/P	80 - 120
2070603	Nickel	95.9	95.1	P/P	80 - 120
2070603	Silver	99.3	100	P/P	80 - 120
2070729	Arsenic	97.3		P	80 - 120
2070729	Cadmium	93.8		P	80 - 120
2070729	Chromium	88.2		P	80 - 120
2070729	Copper	94.5		P	80 - 120
2070729	Lead	91.6		P	80 - 120
2070729	Nickel	94.6		P	80 - 120
2070729	Silver	98.8		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P360794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070721	Arsenic	108	105	P/P	70 - 130
2070721	Cadmium	88.5	88.6	P/P	70 - 130
2070721	Chromium	90.8	89.0	P/P	70 - 130
2070721	Copper	97.6	96.2	P/P	70 - 130
2070721	Lead	102	99.6	P/P	70 - 130
2070721	Nickel	88.9	87.5	P/P	70 - 130
2070721	Silver	90.1	89.3	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P360669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069780	Ammonia-N	104	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P360676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070856	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070673	Ammonia-N	101	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070655	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070378	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	94.8	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070674	Kjeldahl Nitrogen	92.3	95.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070671	NO2NO3-N	98.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070380	NO2NO3-N	98.4	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070529	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070859	Total-P	95.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070656	Total-P	97.0	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070660	O-Phosphate-P	94.2	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070684	O-Phosphate-P	94.5	95.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069779	Fluoride	94.7	95.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071243	Fluoride	98.9	96.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070670	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070345	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070675	Organic Carbon	99.9	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072128	Organic Carbon	98.5	99.3	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070670	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070345	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070675	Organic Carbon	99.9	101	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072128	Organic Carbon	98.5	99.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070603	Iron	1.64	Spike	P	0 - 20
2070603	Zinc	1.31	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070721	Iron	0.706	Spike	P	0 - 20
2070721	Zinc	0.941	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070603	Arsenic	0.220	Spike	P	0 - 20
2070603	Cadmium	0.450	Spike	P	0 - 20
2070603	Chromium	0.286	Spike	P	0 - 20
2070603	Copper	1.06	Spike	P	0 - 20
2070603	Lead	0.0137	Spike	P	0 - 20
2070603	Nickel	0.913	Spike	P	0 - 20
2070603	Silver	0.778	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070721	Arsenic	2.49	Spike	P	0 - 20
2070721	Cadmium	0.0626	Spike	P	0 - 20
2070721	Chromium	1.99	Spike	P	0 - 20
2070721	Copper	1.47	Spike	P	0 - 20
2070721	Lead	2.45	Spike	P	0 - 20
2070721	Nickel	1.58	Spike	P	0 - 20
2070721	Silver	0.872	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069780	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070856	Ammonia-N	0.777	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Ammonia-N	0.565	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070673	Ammonia-N	1.59	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070655	Ammonia-N	2.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070378	Kjeldahl Nitrogen	0.943	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	6.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070674	Kjeldahl Nitrogen	1.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070671	NO2NO3-N	1.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070380	NO2NO3-N	1.83	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070529	Total-P	0.206	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070859	Total-P	3.78	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070656	Total-P	0.585	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070660	O-Phosphate-P	3.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070684	O-Phosphate-P	0.483	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069779	Total Alkalinity	1.09	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P361241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071243	Total Alkalinity	1.11	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P360805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069779	Fluoride	0.516	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071243	Fluoride	1.37	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070670	Organic Carbon	0.252	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P360967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070345	Organic Carbon	0.344	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P361054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070675	Organic Carbon	0.863	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P361056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072128	Organic Carbon	0.615	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070670	Organic Carbon	0.252	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P360967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070345	Organic Carbon	0.344	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070675	Organic Carbon	0.863	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00 dissolved
Batch ID: P361056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072128	Organic Carbon	0.615	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90045

Included Lab Sample IDs: 2070658, 2070659, 2070660, 2070661, 2070678, 2070679, 2070680, 2070681, 2070682, 2070683, 2070684, 2070685

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.6	97.2	P/P	90 - 110
O-Phosphate-P	97.2	96.7	P/P	90 - 110
O-Phosphate-P	98.5	98.0	P/P	90 - 110
O-Phosphate-P	98.9	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90097

Included Lab Sample IDs: 2070654, 2070675, 2070676, 2070677

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90128

Included Lab Sample IDs: 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677

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

Reference Method: SM 2320 B-97

Run ID: A90132

Included Lab Sample IDs: 2070646, 2070647, 2070648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	100	P/P	90 - 110
Total Alkalinity	99.8	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90132

Included Lab Sample IDs: 2070646, 2070647, 2070648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90140

Included Lab Sample IDs: 2070723, 2070724, 2070725, 2070726, 2070727, 2070728, 2070729, 2070730, 2070731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Zinc	100	99.0	P/P	90 - 110
Zinc	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90160

Included Lab Sample IDs: 2070654, 2070655, 2070656, 2070657, 2070670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90160

Included Lab Sample IDs: 2070654, 2070655, 2070656, 2070657, 2070670

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90166

Included Lab Sample IDs: 2070720, 2070721, 2070722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.6	99.3	P/P	90 - 110
Iron	99.9	99.6	P/P	90 - 110
Zinc	99.7	99.8	P/P	90 - 110
Zinc	99.8	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90170

Included Lab Sample IDs: 2070723, 2070724, 2070725, 2070726, 2070727, 2070728, 2070729, 2070730, 2070731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.2	96.3	P/P	90 - 110
Arsenic	96.3	96.2	P/P	90 - 110
Arsenic	98.8	96.7	P/P	90 - 110
Cadmium	94.7	95.8	P/P	90 - 110
Cadmium	95.0	95.1	P/P	90 - 110
Cadmium	95.1	95.1	P/P	90 - 110
Chromium	94.2	95.1	P/P	90 - 110
Chromium	95.4	95.4	P/P	90 - 110
Chromium	95.4	93.8	P/P	90 - 110
Lead	92.7	95.6	P/P	90 - 110
Lead	94.0	94.2	P/P	90 - 110
Lead	94.2	93.6	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Silver	101	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90184

Included Lab Sample IDs: 2070657, 2070670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	100	P/P	90 - 110
Organic Carbon	100	99.4	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A90184

Included Lab Sample IDs: 2070662, 2070663, 2070664, 2070665, 2070666, 2070667, 2070668

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90190

Included Lab Sample IDs: 2070654, 2070655, 2070656, 2070657, 2070670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	108	P/P	90 - 110
Kjeldahl Nitrogen	98.4	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90207

Included Lab Sample IDs: 2070723, 2070724, 2070725, 2070726, 2070727, 2070728, 2070729, 2070730, 2070731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.3	93.4	P/P	90 - 110
Copper	93.4	93.9	P/P	90 - 110
Copper	93.5	93.3	P/P	90 - 110
Nickel	93.6	93.7	P/P	90 - 110
Nickel	94.0	93.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90216

Included Lab Sample IDs: 2070656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.4	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A90216

Included Lab Sample IDs: 2070652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90221

Included Lab Sample IDs: 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	98.3	P/P	90 - 110
Kjeldahl Nitrogen	97.9	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90224

Included Lab Sample IDs: 2070723, 2070724, 2070725, 2070726, 2070728, 2070730, 2070731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	97.9	96.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90237

Included Lab Sample IDs: 2070654, 2070655, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	97.3	P/P	90 - 110
Organic Carbon	97.8	97.8	P/P	90 - 110
Organic Carbon	98.1	96.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00 dissolved

Run ID: A90237

Included Lab Sample IDs: 2070650, 2070651, 2070653, 2070669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.8	P/P	90 - 110
Organic Carbon	98.1	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90239

Included Lab Sample IDs: 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90254

Included Lab Sample IDs: 2070723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	97.5	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90256

Included Lab Sample IDs: 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	99.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90273

Included Lab Sample IDs: 2070654, 2070655, 2070656, 2070657, 2070670

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90299

Included Lab Sample IDs: 2070720, 2070721, 2070722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.0	99.8	P/P	90 - 110
Arsenic	99.3	99.0	P/P	90 - 110
Cadmium	98.3	98.8	P/P	90 - 110
Cadmium	98.8	98.0	P/P	90 - 110
Copper	97.2	98.1	P/P	90 - 110
Copper	98.1	97.3	P/P	90 - 110
Lead	95.9	96.7	P/P	90 - 110
Nickel	97.1	95.5	P/P	90 - 110
Nickel	97.7	97.1	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A90311
Included Lab Sample IDs: 2070649

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

Reference Method: SM 4500 F-C-97
Run ID: A90311
Included Lab Sample IDs: 2070649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90334
Included Lab Sample IDs: 2070720, 2070721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.0	97.7	P/P	90 - 110
Chromium	98.2	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90422
Included Lab Sample IDs: 2070722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	98.5	97.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Iron	106	105	107	105		1.64
	Iron	104	100	99.6			0.706
	Zinc	99.6	99.4	98.0	101		1.31
	Zinc	98.6	95.2	96.1			0.941
EPA 200.8 Rev. 5.4	Arsenic	95.9	95.8	96.1	97.3		0.220
	Arsenic	101	108	105			2.49
	Cadmium	93.0	94.5	94.9	93.8		0.450
	Cadmium	101	88.5	88.6			0.0626
	Chromium	89.2	89.1	88.9	88.2		0.286
	Chromium	99.4	90.8	89.0			1.99
	Copper	97.2	97.1	95.8	94.5		1.06
	Copper	97.3	97.6	96.2			1.47
	Lead	91.1	92.6	92.6	91.6		0.0137
	Lead	95.2	102	99.6			2.45
	Nickel	101	95.9	95.1	94.6		0.913
	Nickel	99.0	88.9	87.5			1.58
	Silver	98.9	99.3	100	98.8		0.778
	Silver	100	90.1	89.3			0.872
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	104	101			1.96
	Ammonia-N	101	102	101			0.777
	Ammonia-N	99.0	100	101			0.565
	Ammonia-N	100	101	99.1			1.59
	Ammonia-N	100	104	102			2.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	105	106			0.943
	Kjeldahl Nitrogen	104	94.8	106			6.55
	Kjeldahl Nitrogen	105	92.3	95.3			1.65
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0	100			1.23
	NO2NO3-N	102	98.4	101			1.83
EPA 365.1 Rev. 2.0	Total-P	98.5	101	101			0.206
	Total-P	96.2	95.4	100			3.78
	Total-P	99.2	97.0	97.6			0.585
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	94.2	98.0			3.02
	O-Phosphate-P	99.3	94.5	95.2			0.483
SM 2320 B-97	Total Alkalinity	103				1.09	
	Total Alkalinity	102				1.11	
SM 4500 F-C-97	Fluoride	97.4	94.7	95.6			0.516
	Fluoride	100	98.9	96.8			1.37
SM 5310 B-00	Organic Carbon	100	101	102			0.252
	Organic Carbon	101	101	102			0.344
	Organic Carbon	99.8	99.9	101			0.863
	Organic Carbon	98.2	98.5	99.3			0.615
SM 5310 B-00 dissolved	Organic Carbon	100	101	102			0.252
	Organic Carbon	101	101	102			0.344
	Organic Carbon	99.8	99.9	101			0.863
	Organic Carbon	98.2	98.5	99.3			0.615

Reference Method Descriptions

Method / DoH Cert

EPA 200.7 Rev. 4.4 /
E31780

Description

Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

Associated Samples

2070720, 2070721, 2070722, 2070723,
2070724, 2070725, 2070726, 2070727,
2070728, 2070729, 2070730, 2070731

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2070720, 2070721, 2070722, 2070723, 2070724, 2070725, 2070726, 2070727, 2070728, 2070729, 2070730, 2070731
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2070654, 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2070654, 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2070654, 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2070654, 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2070658, 2070659, 2070660, 2070661, 2070678, 2070679, 2070680, 2070681, 2070682, 2070683, 2070684, 2070685
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2070646, 2070647, 2070648, 2070649
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2070646, 2070647, 2070648, 2070649
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2070654, 2070655, 2070656, 2070657, 2070670, 2070671, 2070672, 2070673, 2070674, 2070675, 2070676, 2070677
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2070650, 2070651, 2070652, 2070653, 2070662, 2070663, 2070664, 2070665, 2070666, 2070667, 2070668, 2070669

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	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 22:30	Vijayalakshmi Reddy	2070723
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 22:35	Vijayalakshmi Reddy	2070724
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 22:41	Vijayalakshmi Reddy	2070725
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 22:47	Vijayalakshmi Reddy	2070726
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 22:53	Vijayalakshmi Reddy	2070727
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 23:00	Vijayalakshmi Reddy	2070728
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 23:23	Vijayalakshmi Reddy	2070729
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 23:39	Vijayalakshmi Reddy	2070730
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 23:45	Vijayalakshmi Reddy	2070731
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 18:03	Betina Topolski	2070720
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 18:10	Betina Topolski	2070721
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/21/2019 19:12	Betina Topolski	2070722
EPA 200.8 Rev. 5.4	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 00:38	Robert K Palmer	2070729
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 02:33	Robert K Palmer	2070723
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 02:43	Robert K Palmer	2070724
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:08	Robert K Palmer	2070725
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:18	Robert K Palmer	2070726
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:28	Robert K Palmer	2070727
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:37	Robert K Palmer	2070728
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:47	Robert K Palmer	2070730
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 04:56	Robert K Palmer	2070731
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 18:01	Robert K Palmer	2070729
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:16	Robert K Palmer	2070723
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:22	Robert K Palmer	2070724
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:41	Robert K Palmer	2070725
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:48	Robert K Palmer	2070726
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:54	Robert K Palmer	2070727
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 20:00	Robert K Palmer	2070728
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 20:06	Robert K Palmer	2070730
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 20:13	Robert K Palmer	2070731
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 19:24	Robert K Palmer	2070723
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 19:31	Robert K Palmer	2070724
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 19:38	Robert K Palmer	2070725
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 19:45	Robert K Palmer	2070726
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 19:53	Robert K Palmer	2070728
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 20:00	Robert K Palmer	2070730
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 20:07	Robert K Palmer	2070731
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/26/2019 23:03	Robert K Palmer	2070723
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 05:28	Robert K Palmer	2070720
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 06:17	Robert K Palmer	2070721

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Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.8 Rev. 5.4	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 06:46	Robert K Palmer	2070722
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 08:04	Robert K Palmer	2070720
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 08:14	Robert K Palmer	2070721
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/28/2019 08:44	Robert K Palmer	2070722
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/30/2019 10:46	Robert K Palmer	2070720
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	03/30/2019 11:20	Robert K Palmer	2070721
	03/15/2019	03/20/2019 16:35	Elliott D. Healy	04/03/2019 17:17	Robert K Palmer	2070722
	03/15/2019			03/19/2019 09:47	Ping Hua	2070654
EPA 350.1 Rev. 2.0	03/15/2019			03/19/2019 13:33	Ping Hua	2070675
	03/15/2019			03/19/2019 13:34	Ping Hua	2070676
	03/15/2019			03/19/2019 13:36	Ping Hua	2070677
	03/15/2019			03/26/2019 13:40	Julia Storbeck	2070671
	03/15/2019			03/26/2019 13:41	Julia Storbeck	2070672
	03/15/2019			03/26/2019 13:47	Julia Storbeck	2070673
	03/15/2019			03/26/2019 13:58	Julia Storbeck	2070674
	03/15/2019			03/26/2019 14:48	Julia Storbeck	2070655
	03/15/2019			03/26/2019 15:00	Julia Storbeck	2070656
	03/15/2019			03/26/2019 15:01	Julia Storbeck	2070657
	03/15/2019			03/26/2019 15:03	Julia Storbeck	2070670
	03/15/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 11:20	Joseph Suarez	2070654
EPA 351.2 Rev. 2.0	03/15/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 11:24	Joseph Suarez	2070655
	03/15/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 11:26	Joseph Suarez	2070656
	03/15/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 11:27	Joseph Suarez	2070657
	03/15/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 11:29	Joseph Suarez	2070670
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:43	Joseph Suarez	2070671
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:44	Joseph Suarez	2070672
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:46	Joseph Suarez	2070673
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:54	Joseph Suarez	2070674
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:58	Joseph Suarez	2070675
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 15:00	Joseph Suarez	2070676
	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 15:02	Joseph Suarez	2070677
	03/15/2019			03/20/2019 13:24	Lauren Lees	2070671
EPA 353.2 Rev. 2.0	03/15/2019			03/20/2019 13:31	Lauren Lees	2070672
	03/15/2019			03/20/2019 13:33	Lauren Lees	2070673
	03/15/2019			03/20/2019 13:34	Lauren Lees	2070674
	03/15/2019			03/20/2019 13:35	Lauren Lees	2070675
	03/15/2019			03/20/2019 13:36	Lauren Lees	2070676
	03/15/2019			03/20/2019 13:37	Lauren Lees	2070677
	03/15/2019			03/21/2019 13:13	Lauren Lees	2070654
	03/15/2019			03/21/2019 13:14	Lauren Lees	2070655

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Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	03/15/2019			03/21/2019 13:15	Lauren Lees	2070656
	03/15/2019			03/21/2019 13:16	Lauren Lees	2070657
	03/15/2019			03/21/2019 13:17	Lauren Lees	2070670
EPA 365.1 Rev. 2.0	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:50	Beverly Y. Sanders	2070671
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:51	Beverly Y. Sanders	2070672
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:52	Beverly Y. Sanders	2070673
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:53	Beverly Y. Sanders	2070674
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:54	Beverly Y. Sanders	2070675
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 12:03	Beverly Y. Sanders	2070676
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 12:04	Beverly Y. Sanders	2070677
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/27/2019 12:42	Rosalyn Ballman	2070654
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/27/2019 12:43	Rosalyn Ballman	2070655
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/27/2019 12:44	Rosalyn Ballman	2070656
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/27/2019 12:45	Rosalyn Ballman	2070657
EPA 365.1 Rev. 2.0 dissolved	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/27/2019 12:46	Rosalyn Ballman	2070670
	03/15/2019			03/15/2019 15:20	Jhamieka S. Greenwood	2070660
	03/15/2019			03/15/2019 15:32	Jhamieka S. Greenwood	2070684
	03/15/2019			03/15/2019 16:08	Jhamieka S. Greenwood	2070679
	03/15/2019			03/15/2019 16:09	Jhamieka S. Greenwood	2070680
	03/15/2019			03/15/2019 16:10	Jhamieka S. Greenwood	2070681
	03/15/2019			03/15/2019 16:11	Jhamieka S. Greenwood	2070682, 2070683
	03/15/2019			03/15/2019 16:12	Jhamieka S. Greenwood	2070685
	03/15/2019			03/15/2019 16:17	Jhamieka S. Greenwood	2070658
	03/15/2019			03/15/2019 16:18	Jhamieka S. Greenwood	2070659
	03/15/2019			03/15/2019 16:19	Jhamieka S. Greenwood	2070661
SM 2320 B-97	03/15/2019			03/15/2019 16:20	Jhamieka S. Greenwood	2070678
	03/15/2019			03/20/2019 08:19	Dale L. Simmons	2070648
	03/15/2019			03/20/2019 11:52	Dale L. Simmons	2070646
	03/15/2019			03/20/2019 12:04	Dale L. Simmons	2070647
SM 4500 F-C-97	03/15/2019			03/28/2019 06:05	Dale L. Simmons	2070649
	03/15/2019			03/20/2019 05:24	Dale L. Simmons	2070648
	03/15/2019			03/20/2019 06:59	Dale L. Simmons	2070646
	03/15/2019			03/20/2019 07:03	Dale L. Simmons	2070647
SM 5310 B-00	03/15/2019			03/28/2019 06:05	Dale L. Simmons	2070649
	03/15/2019			03/21/2019 22:47	Julia Storbeck	2070670
	03/15/2019			03/22/2019 00:00	Julia Storbeck	2070657
	03/15/2019			03/23/2019 08:06	Julia Storbeck	2070656
	03/15/2019			03/25/2019 15:18	Julia Storbeck	2070675
	03/15/2019			03/25/2019 16:07	Julia Storbeck	2070677
	03/15/2019			03/25/2019 17:20	Julia Storbeck	2070671

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	03/15/2019			03/25/2019 17:32	Julia Storbeck	2070672
	03/15/2019			03/25/2019 17:44	Julia Storbeck	2070673
	03/15/2019			03/25/2019 17:57	Julia Storbeck	2070674
	03/15/2019			03/25/2019 18:09	Julia Storbeck	2070676
	03/15/2019			03/26/2019 06:08	Julia Storbeck	2070654
	03/15/2019			03/26/2019 06:33	Julia Storbeck	2070655
SM 5310 B-00 dissolved	03/15/2019			03/22/2019 00:12	Julia Storbeck	2070662
	03/15/2019			03/22/2019 00:24	Julia Storbeck	2070663
	03/15/2019			03/22/2019 00:37	Julia Storbeck	2070664
	03/15/2019			03/22/2019 00:49	Julia Storbeck	2070665
	03/15/2019			03/22/2019 01:01	Julia Storbeck	2070666
	03/15/2019			03/22/2019 01:13	Julia Storbeck	2070667
	03/15/2019			03/22/2019 01:25	Julia Storbeck	2070668
	03/15/2019			03/23/2019 07:54	Julia Storbeck	2070652
	03/15/2019			03/25/2019 16:31	Julia Storbeck	2070653
	03/15/2019			03/25/2019 16:44	Julia Storbeck	2070669
	03/15/2019			03/26/2019 05:44	Julia Storbeck	2070650
	03/15/2019			03/26/2019 05:56	Julia Storbeck	2070651