

Chemical Analysis Report

SO-DIST-2018-12-12-01

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

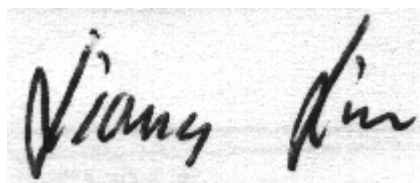
Event Description: **CALOOSA LT 3240A**
Request ID: **RQ-2018-12-03-08**
Customer: **SO-DIST**
Project ID: **BMAP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 07-JAN-2019 14:32

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: 12/11/2018 09:28

Field ID: G3SD0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048241	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P356592	
	SM 4500 F-C-97	Fluoride	0.95		mg F/L	P356322	
2048245	SM 5310 B-00 dissolved	Organic Carbon	8.4		mg C/L	P356208	
2048249	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P356437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P356248	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P356276	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P356233	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P356208	
2048253	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P356057	
2048270	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P356415	
		Zinc	15	U	ug/L	P356415	
	EPA 200.8 Rev. 5.4	Arsenic	3.9		ug/L	P356415	
		Cadmium	0.060	U	ug/L	P356415	
		Chromium	1.2	U	ug/L	P356415	
		Copper	1.4	I	ug/L	P356415	
		Lead	0.50	U	ug/L	P356415	
		Nickel	0.60	U	ug/L	P356415	
		Silver	0.030	U	ug/L	P356415	

Sample Location: USGS Station-ShellPoint

Collection Date/Time: 12/11/2018 09:50

Field ID: G3SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048242	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P356592	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P356322	
2048246	SM 5310 B-00 dissolved	Organic Carbon	8.2		mg C/L	P356208	
2048250	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P356437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P356573	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P356276	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P356233	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P356208	
2048254	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P356057	
2048271	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P356415	
		Zinc	15	U	ug/L	P356415	
	EPA 200.8 Rev. 5.4	Arsenic	3.4		ug/L	P356415	
		Cadmium	0.060	U	ug/L	P356415	
		Chromium	1.2	U	ug/L	P356415	
		Copper	1.0	I	ug/L	P356415	
		Lead	0.50	U	ug/L	P356415	
		Nickel	0.60	U	ug/L	P356415	
		Silver	0.030	U	ug/L	P356415	

Sample Location: Marker # 76

Collection Date/Time: 12/11/2018 10:15

Field ID: G3SD0110

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048243	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P356592	
	SM 4500 F-C-97	Fluoride	0.63		mg F/L	P356322	
2048247	SM 5310 B-00 dissolved	Organic Carbon	11		mg C/L	P356208	
2048251	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P356437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P356573	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P356276	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P356233	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P356208	
2048255	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.059		mg P/L	P356057	
2048272	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P356415	
		Zinc	15	U	ug/L	P356415	
	EPA 200.8 Rev. 5.4	Arsenic	3.2		ug/L	P356415	
		Cadmium	0.060	U	ug/L	P356415	
		Chromium	1.2	U	ug/L	P356415	
		Copper	1.2	I	ug/L	P356415	
		Lead	0.15	U	ug/L	P356415	
		Nickel	0.60	U	ug/L	P356415	
		Silver	0.030	U	ug/L	P356415	

Sample Location: Marker # 52

Collection Date/Time: 12/11/2018 10:50

Field ID: G3SD0111

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048244	SM 2320 B-97	Total Alkalinity	104		mg CaCO3/L	P356318	
	SM 4500 F-C-97	Fluoride	0.36		mg F/L	P356568	
2048248	SM 5310 B-00 dissolved	Organic Carbon	13		mg C/L	P356144	
2048252	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P356437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P356573	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.38		mg N/L	P356276	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P356233	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P356144	
2048256	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P356057	
2048273	EPA 200.7 Rev. 4.4	Iron	170	I	ug/L	P356415	
		Zinc	15	U	ug/L	P356415	
	EPA 200.8 Rev. 5.4	Arsenic	2.3		ug/L	P356415	
		Cadmium	0.060	U	ug/L	P356415	
		Chromium	1.2	U	ug/L	P356415	
		Copper	1.1	I	ug/L	P356415	
		Lead	0.15	U	ug/L	P356415	
		Nickel	0.60	U	ug/L	P356415	
		Silver	0.030	U	ug/L	P356415	

Sample Location: MID CHANNEL OFF POINT

Collection Date/Time: 12/11/2018 13:05

Field ID: BLANK_12112018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2048257	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P356140	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P356141	
2048258	SM 5310 B-00 dissolved	Organic Carbon	0.50	U	mg C/L	P356144	
2048259	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P356438	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P356250	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P356240	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P356231	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P356144	
2048260	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P356055	
2048274	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P356098	
		Zinc	5.0	U	ug/L	P356098	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P356098	
		Cadmium	0.020	U	ug/L	P356098	
		Chromium	0.40	U	ug/L	P356098	
		Copper	0.20	U	ug/L	P356098	
		Lead	0.050	U	ug/L	P356098	
		Nickel	0.20	U	ug/L	P356098	
		Silver	0.010	U	ug/L	P356098	

Ref. Method and Comment:

EPA 353.2 Rev. 2.0: The result was confirmed on 12/17/2018.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356098

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: P356415

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: P356098

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356415

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356437

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356438

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356573

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356240

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356276

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356231

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356055

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356057

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

Reference Method: SM 2320 B-97
Batch ID: P356140

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P356318

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

Reference Method: SM 2320 B-97
Batch ID: P356592

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

Reference Method: SM 4500 F-C-97
Batch ID: P356141

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P356322

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P356568

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P356144

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

Reference Method: SM 5310 B-00
Batch ID: P356208

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356144

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356208

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: P356098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	106		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	107		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	105		P	85 - 115
Copper	106		P	85 - 115
Lead	107		P	85 - 115
Nickel	105		P	85 - 115
Silver	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	111		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	106		P	85 - 115
Copper	108		P	85 - 115
Lead	107		P	85 - 115
Nickel	108		P	85 - 115
Silver	105		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356437

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356438

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356573

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356240

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: P356276

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356231

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356233

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.7		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P356140

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P356318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P356592

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P356141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P356322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P356568

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

Reference Method: SM 5310 B-00
Batch ID: P356144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P356208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.2		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048121	Iron	114	112	P/P	80 - 120
2048121	Zinc	104	106	P/P	80 - 120
2048147	Iron	110		P	80 - 120
2048147	Zinc	101		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048273	Iron	105	103	P/P	70 - 130
2048273	Zinc	104	105	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048121	Arsenic	107	107	P/P	80 - 120
2048121	Cadmium	105	108	P/P	80 - 120
2048121	Chromium	105	106	P/P	80 - 120
2048121	Copper	104	105	P/P	80 - 120
2048121	Lead	107	107	P/P	80 - 120
2048121	Nickel	103	103	P/P	80 - 120
2048121	Silver	104	105	P/P	80 - 120
2048147	Arsenic	108		P	80 - 120
2048147	Cadmium	109		P	80 - 120
2048147	Chromium	104		P	80 - 120
2048147	Copper	99.6		P	80 - 120
2048147	Lead	108		P	80 - 120
2048147	Nickel	99.5		P	80 - 120
2048147	Silver	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048273	Arsenic	113	117	P/P	80 - 120
2048273	Cadmium	107	105	P/P	80 - 120
2048273	Chromium	92.8	93.1	P/P	80 - 120
2048273	Copper	103	104	P/P	80 - 120
2048273	Lead	109	110	P/P	80 - 120
2048273	Nickel	107	109	P/P	80 - 120
2048273	Silver	99.6	99.5	P/P	80 - 120

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356437

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048235	Ammonia-N	107	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048197	Ammonia-N	94.9	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048084	Kjeldahl Nitrogen	108	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048356	Kjeldahl Nitrogen	96.1	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048235	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048136	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048250	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048523	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048234	Total-P	97.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048031	O-Phosphate-P	93.5	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048256	O-Phosphate-P	94.9	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P356141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048022	Fluoride	99.5	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P356322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048100	Fluoride	96.7	98.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P356568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048244	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048157	Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P356208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048177	Organic Carbon	98.7	95.8	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048157	Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048177	Organic Carbon	98.7	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048121	Iron	1.19	Spike	P	0 - 20
2048121	Zinc	2.23	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048273	Iron	1.99	Spike	P	0 - 20
2048273	Zinc	1.04	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048121	Arsenic	0.112	Spike	P	0 - 20
2048121	Cadmium	2.92	Spike	P	0 - 20
2048121	Chromium	0.0994	Spike	P	0 - 20
2048121	Copper	0.509	Spike	P	0 - 20
2048121	Lead	0.242	Spike	P	0 - 20
2048121	Nickel	0.260	Spike	P	0 - 20
2048121	Silver	1.36	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048273	Arsenic	3.13	Spike	P	0 - 20
2048273	Cadmium	1.64	Spike	P	0 - 20
2048273	Chromium	0.392	Spike	P	0 - 20
2048273	Copper	0.849	Spike	P	0 - 20
2048273	Lead	0.925	Spike	P	0 - 20
2048273	Nickel	1.53	Spike	P	0 - 20
2048273	Silver	0.140	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048235	Ammonia-N	1.38	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048197	Ammonia-N	4.66	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048084	Kjeldahl Nitrogen	9.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048356	Kjeldahl Nitrogen	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048235	Kjeldahl Nitrogen	1.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048136	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048250	NO2NO3-N	0.445	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048523	Total-P	1.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048234	Total-P	2.72	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048031	O-Phosphate-P	1.99	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048256	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P356140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048022	Total Alkalinity	0.125	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P356318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048518	Total Alkalinity	4.37	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P356592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048100	Total Alkalinity	0.117	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P356141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048022	Fluoride	0.467	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P356322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048100	Fluoride	1.41	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P356568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048244	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P356144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048157	Organic Carbon	1.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P356208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048177	Organic Carbon	2.58	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048157	Organic Carbon	1.46	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P356208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048177	Organic Carbon	2.58	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: A88313

Included Lab Sample IDs: 2048253, 2048254, 2048255, 2048256, 2048260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	98.6	P/P	90 - 110
O-Phosphate-P	99.0	98.2	P/P	90 - 110
O-Phosphate-P	99.7	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A88341

Included Lab Sample IDs: 2048257

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88341

Included Lab Sample IDs: 2048257

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.7	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88343

Included Lab Sample IDs: 2048252, 2048259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.8	P/P	90 - 110
Organic Carbon	97.9	96.8	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A88343

Included Lab Sample IDs: 2048248, 2048258

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

Reference Method: SM 5310 B-00

Run ID: A88375

Included Lab Sample IDs: 2048249, 2048250, 2048251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.3	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A88375

Included Lab Sample IDs: 2048245, 2048246, 2048247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	98.8	P/P	90 - 110
Organic Carbon	98.8	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88382

Included Lab Sample IDs: 2048249, 2048250, 2048251, 2048252

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88385

Included Lab Sample IDs: 2048259

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88390

Included Lab Sample IDs: 2048274

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.1	102	P/P	90 - 110
Zinc	98.7	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A88410

Included Lab Sample IDs: 2048244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88410

Included Lab Sample IDs: 2048241, 2048242, 2048243

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88412

Included Lab Sample IDs: 2048249

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88429

Included Lab Sample IDs: 2048252

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88434

Included Lab Sample IDs: 2048259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88457

Included Lab Sample IDs: 2048249, 2048250, 2048251, 2048252, 2048259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88465

Included Lab Sample IDs: 2048249, 2048250, 2048251

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88472

Included Lab Sample IDs: 2048259

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.8	92.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88507

Included Lab Sample IDs: 2048270, 2048271, 2048272, 2048273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	98.5	P/P	90 - 110
Iron	98.5	96.7	P/P	90 - 110
Zinc	105	106	P/P	90 - 110
Zinc	106	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88513

Included Lab Sample IDs: 2048274

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	104	105	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Copper	105	104	P/P	90 - 110
Lead	108	106	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Silver	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88515

Included Lab Sample IDs: 2048244

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

Reference Method: SM 2320 B-97

Run ID: A88518

Included Lab Sample IDs: 2048241, 2048242, 2048243

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

Reference Method: SM 2320 B-97

Run ID: A88518

Included Lab Sample IDs: 2048241, 2048242, 2048243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88530

Included Lab Sample IDs: 2048250, 2048251, 2048252

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88549

Included Lab Sample IDs: 2048274

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88578

Included Lab Sample IDs: 2048270, 2048271, 2048272, 2048273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	108	109	P/P	90 - 110
Cadmium	105	106	P/P	90 - 110
Cadmium	106	105	P/P	90 - 110
Chromium	103	98.0	P/P	90 - 110
Chromium	98.0	99.5	P/P	90 - 110
Copper	103	104	P/P	90 - 110
Copper	105	103	P/P	90 - 110
Lead	107	108	P/P	90 - 110
Lead	107	107	P/P	90 - 110
Lead	108	107	P/P	90 - 110
Nickel	104	105	P/P	90 - 110
Nickel	105	104	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Silver	102	102	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	109	114	112	110		1.19
	Iron	106	105	103			1.99
	Zinc	101	104	106	101		2.23
	Zinc	105	104	105			1.04
EPA 200.8 Rev. 5.4	Arsenic	107	107	107	108		0.112
	Arsenic	111	113	117			3.13
	Cadmium	105	105	108	109		2.92
	Cadmium	107	107	105			1.64
	Chromium	105	105	106	104		0.0994
	Chromium	106	92.8	93.1			0.392
	Copper	106	104	105	99.6		0.509
	Copper	108	103	104			0.849
	Lead	107	107	107	108		0.242
	Lead	107	109	110			0.925
	Nickel	105	103	103	99.5		0.260
	Nickel	108	107	109			1.53
	Silver	105	104	105	104		1.36
	Silver	105	99.6	99.5			0.140
EPA 350.1 Rev. 2.0	Ammonia-N	92.6	107	105			1.38
	Ammonia-N	98.8	94.9	103			4.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	108	97.7			9.00
	Kjeldahl Nitrogen	97.3	96.1	98.9			1.48
	Kjeldahl Nitrogen	101	104	106			1.70
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102			0.491
	NO2NO3-N	104	104	104			0.445
EPA 365.1 Rev. 2.0	Total-P	103	102	103			1.23
	Total-P	102	97.7	101			2.72
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	93.5	95.8			1.99
	O-Phosphate-P	96.7	94.9	96.9			1.12
SM 2320 B-97	Total Alkalinity	101				0.125	
	Total Alkalinity	97.8				4.37	
	Total Alkalinity	100				0.117	
SM 4500 F-C-97	Fluoride	98.3	99.5	100			0.467
	Fluoride	98.1	96.7	98.6			1.41
	Fluoride	101	101	101			0.0
SM 5310 B-00	Organic Carbon	92.2	99.0				1.46
	Organic Carbon	99.2	98.7	95.8			2.58
SM 5310 B-00 dissolved	Organic Carbon	92.2	99.0				1.46
	Organic Carbon	99.2	98.7	95.8			2.58

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2048270, 2048271, 2048272, 2048273, 2048274
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2048270, 2048271, 2048272, 2048273, 2048274
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2048249, 2048250, 2048251, 2048252, 2048259
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2048249, 2048250, 2048251, 2048252, 2048259
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2048249, 2048250, 2048251, 2048252, 2048259

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2048249, 2048250, 2048251, 2048252, 2048259
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2048253, 2048254, 2048255, 2048256, 2048260
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2048241, 2048242, 2048243, 2048244, 2048257
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2048241, 2048242, 2048243, 2048244, 2048257
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2048249, 2048250, 2048251, 2048252, 2048259
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2048245, 2048246, 2048247, 2048248, 2048258

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	12/12/2018	12/13/2018 15:45	Elliott D. Healy	12/17/2018 17:55	Betina Topolski	2048274
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/21/2018 21:23	Martin Acosta	2048270
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/21/2018 21:34	Martin Acosta	2048271
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/21/2018 21:45	Martin Acosta	2048272
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/21/2018 22:19	Martin Acosta	2048273
EPA 200.8 Rev. 5.4	12/12/2018	12/13/2018 15:45	Elliott D. Healy	12/22/2018 00:18	Allison Taylor	2048274
	12/12/2018	12/13/2018 15:45	Elliott D. Healy	12/27/2018 21:42	Allison Taylor	2048274
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 03:53	Allison Taylor	2048270
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 04:03	Allison Taylor	2048271
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 04:12	Allison Taylor	2048272
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 04:22	Allison Taylor	2048273
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 09:18	Allison Taylor	2048270
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 09:28	Allison Taylor	2048271
	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 09:37	Allison Taylor	2048272
EPA 350.1 Rev. 2.0	12/12/2018	12/19/2018 17:30	Elliott D. Healy	12/29/2018 10:15	Allison Taylor	2048273
	12/12/2018			12/18/2018 12:16	Ping Hua	2048249
	12/12/2018			12/18/2018 12:18	Ping Hua	2048250
	12/12/2018			12/18/2018 12:19	Ping Hua	2048251
	12/12/2018			12/18/2018 12:21	Ping Hua	2048252
EPA 351.2 Rev. 2.0	12/12/2018			12/18/2018 12:54	Ping Hua	2048259
	12/12/2018	12/17/2018 14:00	Adrian Shelby	12/18/2018 11:54	Chelsea Hernandez	2048249
	12/12/2018	12/17/2018 14:00	Adrian Shelby	12/20/2018 11:02	Chelsea Hernandez	2048259
	12/12/2018	12/26/2018 10:45	Adrian Shelby	12/27/2018 11:29	Joseph Suarez	2048250
	12/12/2018	12/26/2018 10:45	Adrian Shelby	12/27/2018 11:30	Joseph Suarez	2048251
EPA 353.2 Rev. 2.0	12/12/2018	12/26/2018 10:45	Adrian Shelby	12/27/2018 11:32	Joseph Suarez	2048252
	12/12/2018			12/14/2018 12:11	Beverly Y. Sanders	2048250
	12/12/2018			12/14/2018 12:17	Beverly Y. Sanders	2048249
	12/12/2018			12/14/2018 12:18	Beverly Y. Sanders	2048251
	12/12/2018			12/14/2018 12:20	Beverly Y. Sanders	2048252
EPA 365.1 Rev. 2.0	12/12/2018			12/17/2018 11:09	Beverly Y. Sanders	2048259
	12/12/2018	12/17/2018 11:45	Sima Feizi	12/18/2018 16:24	Beverly Y. Sanders	2048252
	12/12/2018	12/17/2018 11:45	Sima Feizi	12/19/2018 14:08	Beverly Y. Sanders	2048259
	12/12/2018	12/17/2018 11:45	Sima Feizi	12/20/2018 11:34	Beverly Y. Sanders	2048249
	12/12/2018	12/17/2018 11:45	Sima Feizi	12/20/2018 11:35	Beverly Y. Sanders	2048250
EPA 365.1 Rev. 2.0 dissolved	12/12/2018	12/17/2018 11:45	Sima Feizi	12/20/2018 11:36	Beverly Y. Sanders	2048251
	12/12/2018			12/12/2018 16:30	Jhamieka S. Greenwood	2048256
	12/12/2018			12/12/2018 17:07	Jhamieka S. Greenwood	2048260
	12/12/2018			12/12/2018 17:21	Jhamieka S. Greenwood	2048255
	12/12/2018			12/12/2018 17:22	Jhamieka S. Greenwood	2048254
	12/12/2018			12/12/2018 17:23	Jhamieka S. Greenwood	2048253

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	12/12/2018			12/13/2018 18:42	Lauren Bottorf	2048257
	12/12/2018			12/18/2018 08:08	Lauren Bottorf	2048244
	12/12/2018			12/21/2018 01:12	Dale L. Simmons	2048241
	12/12/2018			12/21/2018 01:20	Dale L. Simmons	2048242
	12/12/2018			12/21/2018 01:28	Dale L. Simmons	2048243
SM 4500 F-C-97	12/12/2018			12/13/2018 18:42	Lauren Bottorf	2048257
	12/12/2018			12/18/2018 09:56	Lauren Bottorf	2048241
	12/12/2018			12/18/2018 10:04	Lauren Bottorf	2048242
	12/12/2018			12/18/2018 10:11	Lauren Bottorf	2048243
	12/12/2018			12/22/2018 13:59	Dale L. Simmons	2048244
SM 5310 B-00	12/12/2018			12/13/2018 11:21	Megan Treadwell	2048252
	12/12/2018			12/14/2018 12:10	Megan Treadwell	2048259
	12/12/2018			12/15/2018 00:56	Megan Treadwell	2048249
	12/12/2018			12/15/2018 01:12	Megan Treadwell	2048250
	12/12/2018			12/15/2018 01:25	Megan Treadwell	2048251
SM 5310 B-00 dissolved	12/12/2018			12/13/2018 11:08	Megan Treadwell	2048248
	12/12/2018			12/13/2018 11:33	Megan Treadwell	2048258
	12/12/2018			12/14/2018 23:34	Megan Treadwell	2048245
	12/12/2018			12/15/2018 00:30	Megan Treadwell	2048246
	12/12/2018			12/15/2018 00:43	Megan Treadwell	2048247