

Chemical Analysis Report

NE-DIST-2021-01-08-03

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

Event Description: **Bmap 1 SMP 2021**
Request ID: **RQ-2021-01-04-41**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 02-FEB-2021 11:29



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: Butcher Pen Cr @ Confederate Pt Road

Collection Date/Time: 01/07/2021 10:55

Field ID: 20030082

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2217607	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P392153	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P392368	
		Sulfate	34		mg SO4/L	P392371	
	SM 2120 B-2011	Color (true)	49		PCU	P392197	
	SM 2320 B-2011	Total Alkalinity	102		mg CaCO3/L	P392571	
	SM 2540 C-2011	TDS	270		mg/L	P392620	
	SM 2540 D-2011	TSS	8	I	mg/L	P392539	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P392301	MS
2217608	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P392173	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P392544	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P392403	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P392397	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P392512	
2217609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P392157	

Ref. Method and Comment:

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

Sample Location: Craig Cr. 100m Down From Footbridge In Park Collection Date/Time: 01/07/2021 13:00

Field ID: 20030958

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2217604	EPA 180.1 Rev. 2.0	Turbidity	9.1		NTU	P392153	
	EPA 300.0 Rev. 2.1	Bromide	10		mg Br/L	P392582	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P392571	
	SM 2540 D-2011	TSS	10		mg/L	P392540	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P392301	MS
2217605	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P392235	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P392926	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P392257	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P392364	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P392512	
2217606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.054		mg P/L	P392160	
2217629	EPA 200.7 Rev. 4.4	Calcium	106		mg/L	P392522	
		Chromium	5.5	I	ug/L	P392522	
		Iron	700		ug/L	P392522	
		Magnesium	229		mg/L	P392522	
		Manganese	38		ug/L	P392522	
		Zinc	15	U	ug/L	P392522	
	EPA 200.8 Rev. 5.4	Aluminum	170	I	ug/L	P392522	
		Antimony	0.20	U	ug/L	P392522	
		Arsenic	1.5	I	ug/L	P392522	
		Beryllium	0.066	I	ug/L	P392522	
		Cadmium	0.080	U	ug/L	P392522	
		Copper	1.6	U	ug/L	P392522	
		Lead	1.0	I	ug/L	P392522	
		Nickel	2.0	U	ug/L	P392522	
		Selenium	2.0	U	ug/L	P392522	
		Silver	0.040	U	ug/L	P392522	
		Thallium	0.40	U	ug/L	P392522	

Ref. Method and Comment:

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

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

Sample Location: Butcher Pen Cr At Wesconnett

Collection Date/Time: 01/07/2021 10:25

Field ID: 20030760

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2217630	EPA 200.7 Rev. 4.4	Barium	37.9		ug/L	P392326	
		Calcium	49.7		mg/L	P392326	
		Iron	1.27E+03		ug/L	P392326	
		Magnesium	7.03		mg/L	P392326	
		Manganese	30.5		ug/L	P392326	
		Potassium	1.8		mg/L	P392326	
		Sodium	15.9		mg/L	P392326	
	EPA 200.8 Rev. 5.4	Zinc	9.3	I	ug/L	P392326	
		Aluminum	59		ug/L	P392326	
		Antimony	0.10	I	ug/L	P392326	
		Arsenic	0.59		ug/L	P392326	
		Beryllium	0.010	U	ug/L	P392326	
		Boron**	34.6		ug/L	P392326	
		Cadmium	0.020	U	ug/L	P392326	
		Chromium	0.52	I	ug/L	P392326	
		Copper	0.63	I	ug/L	P392326	
		Lead	0.34	I	ug/L	P392326	
		Nickel	0.65	I	ug/L	P392326	
		Selenium	0.20	U	ug/L	P392326	
		Silver	0.010	U	ug/L	P392326	
		Thallium	0.10	U	ug/L	P392326	
	SM 2340B	Hardness	153		mg/L	P392326	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392153

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392326

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392522

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392326

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392522

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392522

Component	Result	Code	Units
Cadmium	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392368

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392371

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392582

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392173

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392235

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392544

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392926

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392257

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392403

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392157

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392160

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

Reference Method: SM 2120 B-2011
Batch ID: P392197

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P392571

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

Reference Method: SM 2540 C-2011
Batch ID: P392620

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P392539

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P392540

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392301

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P392512

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: P392326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	103		P	85 - 115
Calcium	106		P	85 - 115
Iron	104		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	100		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Chromium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Manganese	101		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.6		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	99.0		P	85 - 115
Beryllium	95.3		P	85 - 115
Boron	100		P	85 - 115
Cadmium	99.0		P	85 - 115
Chromium	98.3		P	85 - 115
Copper	93.8		P	85 - 115
Lead	103		P	85 - 115
Nickel	94.3		P	85 - 115
Selenium	96.7		P	85 - 115
Silver	104		P	85 - 115
Thallium	97.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.7		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	97.6		P	85 - 115
Beryllium	88.8		P	85 - 115
Cadmium	95.2		P	85 - 115
Copper	100		P	85 - 115
Lead	100		P	85 - 115
Nickel	95.4		P	85 - 115
Selenium	96.0		P	85 - 115
Silver	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392522

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392368

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392371

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392582

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392173

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392235

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392544

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: P392926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392257

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392403

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

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: P392397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392160

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

Reference Method: SM 2120 B-2011
Batch ID: P392197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P392571

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P392301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P392512

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217559	Barium	101	104	P/P	80 - 120
2217559	Calcium	105	109	P/P	80 - 120
2217559	Iron	107	108	P/P	80 - 120
2217559	Magnesium	107	108	P/P	80 - 120
2217559	Manganese	103	106	P/P	80 - 120
2217559	Potassium	101	101	P/P	80 - 120
2217559	Sodium	94.2		P	80 - 120
2217559	Zinc	95.6	97.7	P/P	80 - 120
2218161	Barium	105		P	80 - 120
2218161	Calcium	102		P	80 - 120
2218161	Iron	104		P	80 - 120
2218161	Magnesium	108		P	80 - 120
2218161	Manganese	105		P	80 - 120
2218161	Potassium	103		P	80 - 120
2218161	Sodium	105		P	80 - 120
2218161	Zinc	94.3		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217629	Chromium	98.9	100	P/P	70 - 130
2217629	Iron	106	109	P/P	70 - 130
2217629	Manganese	98.2	97.4	P/P	70 - 130
2217629	Zinc	105	105	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217559	Aluminum	98.3	99.5	P/P	80 - 120
2217559	Antimony	100	99.9	P/P	80 - 120
2217559	Arsenic	100	99.2	P/P	80 - 120
2217559	Beryllium	91.8	96.4	P/P	80 - 120
2217559	Boron	99.8	101	P/P	80 - 120
2217559	Cadmium	101	101	P/P	80 - 120
2217559	Chromium	99.2	99.8	P/P	80 - 120
2217559	Copper	95.0	96.1	P/P	80 - 120
2217559	Lead	104	104	P/P	80 - 120
2217559	Nickel	95.7	95.6	P/P	80 - 120
2217559	Selenium	96.7	96.0	P/P	80 - 120
2217559	Silver	103	104	P/P	80 - 120
2217559	Thallium	98.8	99.5	P/P	80 - 120
2218161	Aluminum	92.1		P	80 - 120
2218161	Antimony	96.2		P	80 - 120
2218161	Arsenic	97.7		P	80 - 120
2218161	Beryllium	91.6		P	80 - 120
2218161	Boron	101		P	80 - 120
2218161	Cadmium	101		P	80 - 120
2218161	Chromium	99.1		P	80 - 120
2218161	Copper	93.3		P	80 - 120
2218161	Lead	104		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218161	Nickel	95.1		P	80 - 120
2218161	Selenium	95.2		P	80 - 120
2218161	Silver	105		P	80 - 120
2218161	Thallium	99.5		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217629	Aluminum	103	108	P/P	70 - 130
2217629	Antimony	106	108	P/P	70 - 130
2217629	Arsenic	104	108	P/P	70 - 130
2217629	Beryllium	112	119	P/P	70 - 130
2217629	Cadmium	91.2	93.5	P/P	70 - 130
2217629	Copper	111	111	P/P	70 - 130
2217629	Lead	105	106	P/P	70 - 130
2217629	Nickel	99.3	100	P/P	70 - 130
2217629	Selenium	102	105	P/P	70 - 130
2217629	Silver	96.2	98.2	P/P	70 - 130
2217629	Thallium	103	106	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217570	Chloride	101		P	90 - 110
2217663	Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217570	Sulfate	100		P	90 - 110
2217663	Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2218910	Bromide	101	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217608	Ammonia-N	97.6	94.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P392235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2216955	Ammonia-N	97.2	97.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217358	Kjeldahl Nitrogen	93.4	91.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2216489	Kjeldahl Nitrogen	110	104	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217245	NO2NO3-N	98.3	96.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217573	NO2NO3-N	95.5	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217245	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217576	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217483	O-Phosphate-P	97.9	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217606	O-Phosphate-P	95.7	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P392301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217721	Fluoride	94.7	93.6	P/F	94 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P392512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2217576	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P392153

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217569	Turbidity	2.88	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217559	Barium	2.57	Spike	P	0 - 20
2217559	Calcium	1.95	Spike	P	0 - 20
2217559	Iron	1.01	Spike	P	0 - 20
2217559	Magnesium	0.700	Spike	P	0 - 20
2217559	Manganese	2.05	Spike	P	0 - 20
2217559	Potassium	0.109	Spike	P	0 - 20
2217559	Sodium	1.30	Spike	P	0 - 20
2217559	Zinc	2.18	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392522

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217629	Calcium	2.31	Spike	P	0 - 20
2217629	Chromium	1.34	Spike	P	0 - 20
2217629	Iron	2.12	Spike	P	0 - 20
2217629	Magnesium	2.72	Spike	P	0 - 20
2217629	Manganese	0.685	Spike	P	0 - 20
2217629	Zinc	0.0614	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217559	Aluminum	1.22	Spike	P	0 - 20
2217559	Antimony	0.100	Spike	P	0 - 20
2217559	Arsenic	0.784	Spike	P	0 - 20
2217559	Beryllium	4.95	Spike	P	0 - 20
2217559	Boron	0.819	Spike	P	0 - 20
2217559	Cadmium	0.219	Spike	P	0 - 20
2217559	Chromium	0.611	Spike	P	0 - 20
2217559	Copper	1.10	Spike	P	0 - 20
2217559	Lead	0.00389	Spike	P	0 - 20
2217559	Nickel	0.130	Spike	P	0 - 20
2217559	Selenium	0.704	Spike	P	0 - 20
2217559	Silver	1.34	Spike	P	0 - 20
2217559	Thallium	0.633	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217629	Aluminum	4.63	Spike	P	0 - 20
2217629	Antimony	1.61	Spike	P	0 - 20
2217629	Arsenic	3.76	Spike	P	0 - 20
2217629	Beryllium	5.70	Spike	P	0 - 20
2217629	Cadmium	2.47	Spike	P	0 - 20
2217629	Copper	0.0114	Spike	P	0 - 20
2217629	Lead	1.38	Spike	P	0 - 20
2217629	Nickel	0.659	Spike	P	0 - 20
2217629	Selenium	2.58	Spike	P	0 - 20
2217629	Silver	2.04	Spike	P	0 - 20
2217629	Thallium	3.07	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217570	Chloride	0.925	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217570	Sulfate	0.446	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218910	Bromide	1.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P392173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217608	Ammonia-N	2.25	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P392235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2216955	Ammonia-N	0.177	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217358	Kjeldahl Nitrogen	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P392926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2216489	Kjeldahl Nitrogen	4.72	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217245	NO2NO3-N	1.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217573	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217245	Total-P	0.416	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P392397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217576	Total-P	0.338	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217483	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217606	O-Phosphate-P	0.467	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P392197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217569	Color (true)	0.101	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P392571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2218508	Total Alkalinity	0.00832	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P392620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217571	TDS	3.68	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P392301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217721	Fluoride	0.463	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P392512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2217576	Organic Carbon	1.25	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102965

Included Lab Sample IDs: 2217604, 2217607

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102966

Included Lab Sample IDs: 2217606, 2217609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.1	P/P	90 - 110
O-Phosphate-P	98.8	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102972

Included Lab Sample IDs: 2217608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A102981

Included Lab Sample IDs: 2217607

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103000

Included Lab Sample IDs: 2217605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103007

Included Lab Sample IDs: 2217607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	100	P/P	90 - 110
Sulfate	98.2	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103008

Included Lab Sample IDs: 2217605

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

Reference Method: SM 4500 F-C-2011

Run ID: A103018

Included Lab Sample IDs: 2217604, 2217607

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

Reference Method: SM 4500 F-C-2011

Run ID: A103018

Included Lab Sample IDs: 2217604, 2217607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103026

Included Lab Sample IDs: 2217608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.5	96.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103074

Included Lab Sample IDs: 2217630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	103	P/P	90 - 110
Calcium	99.6	102	P/P	90 - 110
Iron	97.9	101	P/P	90 - 110
Magnesium	98.8	101	P/P	90 - 110
Manganese	105	104	P/P	90 - 110
Potassium	95.9	97.6	P/P	90 - 110
Sodium	98.0	98.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103077

Included Lab Sample IDs: 2217630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	97.7	97.4	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103079

Included Lab Sample IDs: 2217604

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	95.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103080

Included Lab Sample IDs: 2217605, 2217608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	102	P/P	90 - 110
Total-P	100	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103104

Included Lab Sample IDs: 2217605, 2217608

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103127

Included Lab Sample IDs: 2217604, 2217607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.7	97.3	P/P	90 - 110
Total Alkalinity	97.3	91.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103128

Included Lab Sample IDs: 2217630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.0	102	P/P	90 - 110
Antimony	96.3	96.5	P/P	90 - 110
Arsenic	98.4	100	P/P	90 - 110
Beryllium	97.5	97.6	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	100	100	P/P	90 - 110
Copper	94.1	97.4	P/P	90 - 110
Lead	106	106	P/P	90 - 110
Nickel	94.6	98.2	P/P	90 - 110
Selenium	99.1	99.9	P/P	90 - 110
Thallium	100	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103144

Included Lab Sample IDs: 2217608

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103145

Included Lab Sample IDs: 2217630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	105	P/P	90 - 110
Silver	104	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103146

Included Lab Sample IDs: 2217629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.7	100	P/P	90 - 110
Chromium	103	99.5	P/P	90 - 110
Iron	98.8	100	P/P	90 - 110
Magnesium	99.6	100	P/P	90 - 110
Manganese	101	99.7	P/P	90 - 110
Zinc	107	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103204

Included Lab Sample IDs: 2217629

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.0	97.0	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	99.3	100	P/P	90 - 110
Beryllium	101	107	P/P	90 - 110
Cadmium	97.1	97.0	P/P	90 - 110
Copper	105	105	P/P	90 - 110
Lead	99.9	99.3	P/P	90 - 110
Nickel	97.5	98.7	P/P	90 - 110
Selenium	99.3	100	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103273

Included Lab Sample IDs: 2217605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.2	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.88	
EPA 200.7 Rev. 4.4	Barium	103	101	104	105			2.57
	Calcium	106	105	109	102			1.95
	Calcium	105						2.31
	Chromium	102	98.9	100				1.34
	Iron	104	107	108	104			1.01
	Iron	105	106	109				2.12
	Magnesium	105	107	108	108			0.700
	Magnesium	104						2.72
	Manganese	104	103	106	105			2.05
	Manganese	101	98.2	97.4				0.685
	Potassium	101	101	101	103			0.109
	Sodium	100	94.2	105				1.30
	Zinc	104	95.6	97.7	94.3			2.18
	Zinc	106	105	105				0.0614
EPA 200.8 Rev. 5.4	Aluminum	97.6	98.3	99.5	92.1			1.22
	Aluminum	94.7	103	108				4.63
	Antimony	99.6	100	99.9	96.2			0.100
	Antimony	102	106	108				1.61
	Arsenic	99.0	100	99.2	97.7			0.784
	Arsenic	97.6	104	108				3.76
	Beryllium	95.3	91.8	96.4	91.6			4.95
	Beryllium	88.8	112	119				5.70
	Boron	100	99.8	101	101			0.819
	Cadmium	99.0	101	101	101			0.219
	Cadmium	95.2	91.2	93.5				2.47
	Chromium	98.3	99.2	99.8	99.1			0.611
	Copper	93.8	95.0	96.1	93.3			1.10
	Copper	100	111	111				0.0114
	Lead	103	104	104	104			0.0038
	Lead	100	105	106				1.38
	Nickel	94.3	95.7	95.6	95.1			0.130
	Nickel	95.4	99.3	100				0.659
	Selenium	96.7	96.7	96.0	95.2			0.704
	Selenium	96.0	102	105				2.58
	Silver	104	103	104	105			1.34
	Silver	103	96.2	98.2				2.04
	Thallium	97.5	98.8	99.5	99.5			0.633
	Thallium	99.6	103	106				3.07
EPA 300.0 Rev. 2.1	Bromide	102	101	99.6				1.12
	Chloride	100	101	98.9			0.925	
	Sulfate	99.3	100	98.1			0.446	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	97.6	94.8				2.25
	Ammonia-N	96.4	97.2	97.0				0.177
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	93.4	91.0				1.47
	Kjeldahl Nitrogen	100	110	104				4.72
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.3	96.3				1.58
	NO2NO3-N	96.0	95.5	95.5				0.0
EPA 365.1 Rev. 2.0	Total-P	103	105	106				0.416
	Total-P	103	104	104				0.338
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	97.9	98.1				0.204
	O-Phosphate-P	99.5	95.7	96.4				0.467
SM 2120 B-2011	Color (true)	99.9					0.101	
SM 2320 B-2011	Total Alkalinity	96.8					0.0083	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
					LCS	
SM 2540 C-2011	TDS				3.68	
SM 4500 F-C-2011	Fluoride	97.2	94.7	93.6		0.463
SM 5310 B-2011	Organic Carbon	97.7	103			1.25

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2217604, 2217607
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2217629, 2217630
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2217629, 2217630
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2217604
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2217607
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2217607
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2217605, 2217608
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2217605, 2217608
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2217605, 2217608
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2217605, 2217608
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2217606, 2217609
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2217607
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2217604, 2217607
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2217630
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2217607
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2217604, 2217607
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2217604, 2217607
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2217605, 2217608

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	01/08/2021			01/08/2021 15:37	Yen Ta	2217604, 2217607
EPA 200.7 Rev. 4.4	01/08/2021	01/13/2021 14:00	Elliott D. Healy	01/14/2021 16:52	Betina Topolski	2217630
	01/08/2021	01/13/2021 14:00	Elliott D. Healy	01/15/2021 10:48	Betina Topolski	2217630
	01/08/2021	01/19/2021 15:45	Elliott D. Healy	01/20/2021 17:01	Betina Topolski	2217629
EPA 200.8 Rev. 5.4	01/08/2021	01/13/2021 14:00	Elliott D. Healy	01/19/2021 19:30	Alexander Thompson	2217630
	01/08/2021	01/13/2021 14:00	Elliott D. Healy	01/20/2021 19:40	Alexander Thompson	2217630
	01/08/2021	01/19/2021 15:45	Elliott D. Healy	01/22/2021 18:10	Alexander Thompson	2217629
	01/08/2021	01/19/2021 15:45	Elliott D. Healy	01/22/2021 19:17	Alexander Thompson	2217629
EPA 300.0 Rev. 2.1	01/08/2021			01/12/2021 17:36	Lipi Saha	2217607
	01/08/2021			01/15/2021 15:45	Lipi Saha	2217604
EPA 350.1 Rev. 2.0	01/08/2021			01/10/2021 15:57	Ping Hua	2217608
	01/08/2021			01/11/2021 16:37	Ping Hua	2217605
EPA 351.2 Rev. 2.0	01/08/2021	01/19/2021 12:12	Yen Ta	01/20/2021 15:47	Julia Storbeck	2217608
	01/08/2021	01/26/2021 12:49	Yen Ta	01/27/2021 12:56	Julia Storbeck	2217605
EPA 353.2 Rev. 2.0	01/08/2021			01/12/2021 11:37	Beverly Y. Sanders	2217605
	01/08/2021			01/13/2021 10:45	Beverly Y. Sanders	2217608
EPA 365.1 Rev. 2.0	01/08/2021	01/14/2021 14:05	Shengyu Wang	01/15/2021 11:21	Lipi Saha	2217605
	01/08/2021	01/14/2021 14:05	Shengyu Wang	01/15/2021 12:17	Lipi Saha	2217608
EPA 365.1 Rev. 2.0 dissolved	01/08/2021			01/08/2021 16:03	Ping Hua	2217609
	01/08/2021			01/08/2021 16:36	Ping Hua	2217606
SM 2120 B-2011	01/08/2021			01/08/2021 17:18	Benjamin T. Nordmann	2217607
SM 2320 B-2011	01/08/2021			01/15/2021 02:25	Dale L. Simmons	2217607
	01/08/2021			01/15/2021 04:03	Dale L. Simmons	2217604
SM 2340B	01/08/2021			01/14/2021 16:52	Betina Topolski	2217630
SM 2540 C-2011	01/08/2021			01/12/2021 15:25	Yijie Li	2217607
SM 2540 D-2011	01/08/2021			01/12/2021 15:25	Yijie Li	2217604, 2217607
SM 4500 F-C-2011	01/08/2021			01/12/2021 14:15	Dale L. Simmons	2217607
	01/08/2021			01/12/2021 15:08	Dale L. Simmons	2217604
SM 5310 B-2011	01/08/2021			01/14/2021 21:32	Madeline Gruver	2217605
	01/08/2021			01/14/2021 21:45	Madeline Gruver	2217608