Chemical Analysis Report

NE-DIST-2022-05-27-02

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

Event Description: **Moses Creek 2022**
Request ID: **RQ-2022-05-23-12**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 22-JUN-2022 09:30

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: Moses Creek at Preserve Dock **Collection Date/Time: 05/26/2022 11:30**

Field ID: G5NE0004 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330407	EPA 180.1 Rev. 2.0	Turbidity	18		NTU	P414498	
	SM 2320 B-2011	Total Alkalinity	108		mg CaCO3/L	P414794	
	SM 2540 D-2011	TSS	32	A	mg/L	P414969	
	SM 4500-F- C-2011	Fluoride	0.58		mg F/L	P414801	
2330408	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P414973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P414952	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P415033	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P414554	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P415265	

Sample Location: MOULTRIE CR @ US 1 **Collection Date/Time: 05/26/2022 11:15**

Field ID: 27010055 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330409	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P414498	
	SM 2320 B-2011	Total Alkalinity	124		mg CaCO3/L	P414794	
	SM 2540 D-2011	TSS	30		mg/L	P414969	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P414801	
2330410	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P414973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P414952	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P415033	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P414554	
	SM 5310 B-2011	Organic Carbon	6.1		mg C/L	P415265	
2330420	EPA 200.7 Rev. 4.4	Calcium	365		mg/L	P414615	
		Iron	260	I	ug/L	P414615	
		Magnesium	1.08E+03		mg/L	P414615	
		Strontium	6.27E+03		ug/L	P414615	
		Tin	150	U	ug/L	P414615	
		Titanium	8.7	I	ug/L	P414615	
		Vanadium	8.0	U	ug/L	P414615	
		Zinc	20	U	ug/L	P414615	
	EPA 200.8 Rev. 5.4	Aluminum	408		ug/L	P414615	
		Antimony	0.20	U	ug/L	P414615	
		Arsenic	2.78		ug/L	P414615	
		Beryllium	0.041	I	ug/L	P414615	
		Cadmium	0.080	U	ug/L	P414615	
		Chromium	1.6	U	ug/L	P414615	
		Cobalt	0.20	I	ug/L	P414615	
		Copper	1.9	I	ug/L	P414615	
		Lead	2.0	U	ug/L	P414615	
		Manganese	30.6		ug/L	P414615	
		Molybdenum	9.8		ug/L	P414615	
		Nickel	2.0	U	ug/L	P414615	
		Selenium	0.80	U	ug/L	P414615	
		Silver	0.040	U	ug/L	P414615	
		Thallium	1.0	U	ug/L	P414615	

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

Sample Location: FB_05262022 **Collection Date/Time: 05/26/2022 11:40**

Field ID: FB_05262022 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330411	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P414498	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P414793	
	SM 2540 D-2011	TSS	2	U	mg/L	P414967	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P414800	
2330412	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P415217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P414953	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P415069	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P414628	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P414683	
2330421	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P414566	
		Iron	30	U	ug/L	P414566	
		Magnesium	0.040	U	mg/L	P414566	
		Strontium	2.0	U	ug/L	P414566	
		Tin	3.0	U	ug/L	P414566	
		Titanium	0.75	U	ug/L	P414566	
		Vanadium	2.0	U	ug/L	P414566	
		Zinc	5.0	U	ug/L	P414566	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P414566	
		Antimony	0.050	U	ug/L	P414566	
		Arsenic	0.050	U	ug/L	P414566	
		Beryllium	0.010	U	ug/L	P414566	
		Cadmium	0.020	U	ug/L	P414566	
		Chromium	0.40	U	ug/L	P414566	
		Cobalt	0.020	U	ug/L	P414566	
		Copper	0.40	U	ug/L	P414566	
		Lead	0.20	U	ug/L	P414566	
		Manganese	0.10	U	ug/L	P414566	
		Molybdenum	0.15	U	ug/L	P414566	
		Nickel	0.50	U	ug/L	P414566	
		Selenium	0.20	U	ug/L	P414566	
		Silver	0.010	U	ug/L	P414566	
		Thallium	0.10	U	ug/L	P414566	

Ref. Method and Comment:
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414498

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414566

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414615

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	3.0	U	ug/L
Tin	25	U	ug/L
Titanium	1.0	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414566

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
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

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
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414973

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415217

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414952

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414953

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415033

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415069

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414554

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414628

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

Reference Method: SM 2320 B-2011
Batch ID: P414793

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

Reference Method: SM 2320 B-2011
Batch ID: P414794

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

Reference Method: SM 2540 D-2011
Batch ID: P414967

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P414969

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414800

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P414683

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P415265

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414498

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	110		P	85 - 115
Magnesium	111		P	85 - 115
Strontium	96.9		P	85 - 115
Tin	98.9		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	95.8		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Strontium	103		P	85 - 115
Tin	104		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	94.5		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.2		P	85 - 115
Antimony	97.9		P	85 - 115
Arsenic	98.4		P	85 - 115
Beryllium	94.0		P	85 - 115
Cadmium	96.7		P	85 - 115
Chromium	95.6		P	85 - 115
Cobalt	98.7		P	85 - 115
Copper	96.1		P	85 - 115
Lead	96.9		P	85 - 115
Manganese	96.8		P	85 - 115
Molybdenum	97.0		P	85 - 115
Nickel	96.7		P	85 - 115
Selenium	97.4		P	85 - 115
Silver	101		P	85 - 115
Thallium	97.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	98.1		P	85 - 115
Arsenic	97.5		P	85 - 115
Beryllium	90.6		P	85 - 115
Cadmium	96.7		P	85 - 115
Chromium	95.3		P	85 - 115
Cobalt	97.2		P	85 - 115
Copper	94.9		P	85 - 115
Lead	98.9		P	85 - 115
Manganese	96.8		P	85 - 115
Molybdenum	97.7		P	85 - 115
Nickel	96.5		P	85 - 115
Selenium	96.2		P	85 - 115
Silver	97.8		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414973

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415217

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414952

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414953

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415033

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: P415069

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414554

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: P414628

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

Reference Method: SM 2320 B-2011
Batch ID: P414793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P414794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P414800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P414683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P415265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330722	Calcium	101		P	80 - 120
2330722	Iron	108	110	P/P	80 - 120
2330722	Magnesium	104		P	80 - 120
2330722	Strontium	95.7	97.0	P/P	80 - 120
2330722	Tin	104	105	P/P	80 - 120
2330722	Titanium	106	104	P/P	80 - 120
2330722	Vanadium	101	102	P/P	80 - 120
2330722	Zinc	103	104	P/P	80 - 120
2330723	Calcium	106		P	80 - 120
2330723	Iron	114		P	80 - 120
2330723	Magnesium	106		P	80 - 120
2330723	Strontium	104		P	80 - 120
2330723	Tin	107		P	80 - 120
2330723	Titanium	110		P	80 - 120
2330723	Vanadium	103		P	80 - 120
2330723	Zinc	110		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330285	Calcium	111		P	70 - 130
2330285	Iron	107	106	P/P	70 - 130
2330285	Strontium	93.3	101	P/P	70 - 130
2330285	Tin	76.2	83.1	P/P	70 - 130
2330285	Titanium	96.4	100	P/P	70 - 130
2330285	Vanadium	90.5	93.6	P/P	70 - 130
2330285	Zinc	94.9	98.8	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330722	Aluminum	101	99.4	P/P	80 - 120
2330722	Antimony	102	101	P/P	80 - 120
2330722	Arsenic	101	99.0	P/P	80 - 120
2330722	Beryllium	99.7	95.8	P/P	80 - 120
2330722	Cadmium	102	97.1	P/P	80 - 120
2330722	Chromium	98.8	97.7	P/P	80 - 120
2330722	Cobalt	101	99.0	P/P	80 - 120
2330722	Copper	95.6	95.5	P/P	80 - 120
2330722	Lead	101	99.8	P/P	80 - 120
2330722	Manganese	103	99.8	P/P	80 - 120
2330722	Molybdenum	103	100	P/P	80 - 120
2330722	Nickel	99.2	98.3	P/P	80 - 120
2330722	Selenium	98.0	96.6	P/P	80 - 120
2330722	Silver	102	98.4	P/P	80 - 120
2330722	Thallium	103	102	P/P	80 - 120
2330723	Aluminum	96.1		P	80 - 120
2330723	Antimony	100		P	80 - 120
2330723	Arsenic	99.5		P	80 - 120
2330723	Beryllium	98.5		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330723	Cadmium	99.8		P	80 - 120
2330723	Chromium	98.3		P	80 - 120
2330723	Cobalt	98.9		P	80 - 120
2330723	Copper	96.4		P	80 - 120
2330723	Lead	99.4		P	80 - 120
2330723	Manganese	101		P	80 - 120
2330723	Molybdenum	99.2		P	80 - 120
2330723	Nickel	97.7		P	80 - 120
2330723	Selenium	96.2		P	80 - 120
2330723	Silver	98.9		P	80 - 120
2330723	Thallium	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330285	Aluminum	112	114	P/P	70 - 130
2330285	Antimony	97.7	98.6	P/P	70 - 130
2330285	Arsenic	109	111	P/P	70 - 130
2330285	Beryllium	109	101	P/P	70 - 130
2330285	Cadmium	96.0	95.8	P/P	70 - 130
2330285	Chromium	96.1	96.9	P/P	70 - 130
2330285	Cobalt	109	109	P/P	70 - 130
2330285	Copper	105	103	P/P	70 - 130
2330285	Lead	102	104	P/P	70 - 130
2330285	Manganese	94.9	96.5	P/P	70 - 130
2330285	Molybdenum	110	110	P/P	70 - 130
2330285	Nickel	108	109	P/P	70 - 130
2330285	Selenium	102	103	P/P	70 - 130
2330285	Silver	90.3	91.4	P/P	70 - 130
2330285	Thallium	104	106	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330408	Ammonia-N	97.2	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2329253	Ammonia-N	98.2	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2329808	Kjeldahl Nitrogen	90.0	105	F/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2329806	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330100	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330410	Total-P	94.6	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330374	Total-P	104	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P414800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330291	Fluoride	98.1	98.7	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330519	Fluoride	98.2	98.9	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P414683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330379	Organic Carbon	93.4	92.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P415265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330408	Organic Carbon	89.6	87.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330315	Turbidity	4.31	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330722	Calcium	0.0219	Spike	P	0 - 20
2330722	Iron	1.78	Spike	P	0 - 20
2330722	Magnesium	2.31	Spike	P	0 - 20
2330722	Strontium	1.25	Spike	P	0 - 20
2330722	Tin	1.14	Spike	P	0 - 20
2330722	Titanium	1.80	Spike	P	0 - 20
2330722	Vanadium	1.54	Spike	P	0 - 20
2330722	Zinc	0.588	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330285	Calcium	1.46	Spike	P	0 - 20
2330285	Iron	0.722	Spike	P	0 - 20
2330285	Magnesium	1.33	Spike	P	0 - 20
2330285	Strontium	4.81	Spike	P	0 - 20
2330285	Tin	8.57	Spike	P	0 - 20
2330285	Titanium	3.29	Spike	P	0 - 20
2330285	Vanadium	3.36	Spike	P	0 - 20
2330285	Zinc	4.11	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330722	Aluminum	1.83	Spike	P	0 - 20
2330722	Antimony	1.18	Spike	P	0 - 20
2330722	Arsenic	1.86	Spike	P	0 - 20
2330722	Beryllium	3.96	Spike	P	0 - 20
2330722	Cadmium	4.47	Spike	P	0 - 20
2330722	Chromium	1.04	Spike	P	0 - 20
2330722	Cobalt	1.65	Spike	P	0 - 20
2330722	Copper	0.121	Spike	P	0 - 20
2330722	Lead	0.931	Spike	P	0 - 20
2330722	Manganese	1.74	Spike	P	0 - 20
2330722	Molybdenum	2.69	Spike	P	0 - 20
2330722	Nickel	0.931	Spike	P	0 - 20
2330722	Selenium	1.45	Spike	P	0 - 20
2330722	Silver	3.96	Spike	P	0 - 20
2330722	Thallium	0.466	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330285	Aluminum	1.83	Spike	P	0 - 20
2330285	Antimony	0.950	Spike	P	0 - 20
2330285	Arsenic	1.80	Spike	P	0 - 20
2330285	Beryllium	6.84	Spike	P	0 - 20
2330285	Cadmium	0.190	Spike	P	0 - 20
2330285	Chromium	0.773	Spike	P	0 - 20
2330285	Cobalt	0.217	Spike	P	0 - 20
2330285	Copper	1.10	Spike	P	0 - 20
2330285	Lead	1.38	Spike	P	0 - 20
2330285	Manganese	0.889	Spike	P	0 - 20
2330285	Molybdenum	0.774	Spike	P	0 - 20
2330285	Nickel	0.186	Spike	P	0 - 20
2330285	Selenium	1.16	Spike	P	0 - 20
2330285	Silver	1.20	Spike	P	0 - 20
2330285	Thallium	1.91	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330408	Ammonia-N	0.742	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2329253	Ammonia-N	0.916	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2329808	Kjeldahl Nitrogen	13.9	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330318	Kjeldahl Nitrogen	5.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2329806	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330100	NO2NO3-N	0.382	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330410	Total-P	2.78	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330374	Total-P	1.44	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P414793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330291	Total Alkalinity	0.629	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P414794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330519	Total Alkalinity	2.60	Sample	P	0 - 3.8

Reference Method: SM 2540 D-2011
Batch ID: P414967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330382	TSS	7.63	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P414969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330407	TSS	7.50	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P414800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330291	Fluoride	0.489	Spike	P	0 - 1.6

Quality Assurance Report
Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330519	Fluoride	0.520	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P414683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330379	Organic Carbon	0.862	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P415265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330408	Organic Carbon	1.89	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: A112469
Included Lab Sample IDs: 2330407, 2330409, 2330411

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112557
Included Lab Sample IDs: 2330421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.3	98.7	P/P	90 - 110
Antimony	98.4	97.5	P/P	90 - 110
Arsenic	99.6	99.1	P/P	90 - 110
Beryllium	95.7	97.6	P/P	90 - 110
Cadmium	97.8	97.0	P/P	90 - 110
Chromium	97.4	97.4	P/P	90 - 110
Cobalt	100	99.1	P/P	90 - 110
Copper	98.8	97.9	P/P	90 - 110
Lead	97.0	96.5	P/P	90 - 110
Manganese	97.2	97.5	P/P	90 - 110
Molybdenum	98.0	97.6	P/P	90 - 110
Nickel	99.8	98.4	P/P	90 - 110
Selenium	97.7	97.9	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	96.1	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A112574
Included Lab Sample IDs: 2330408, 2330410

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

Reference Method: SM 5310 B-2011
Run ID: A112583
Included Lab Sample IDs: 2330412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	96.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112611
Included Lab Sample IDs: 2330420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	104	P/P	90 - 110
Antimony	97.1	99.1	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	96.7	98.6	P/P	90 - 110
Cadmium	97.8	98.7	P/P	90 - 110
Chromium	95.4	95.4	P/P	90 - 110
Cobalt	101	101	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	98.2	98.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112611
Included Lab Sample IDs: 2330420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	98.0	98.7	P/P	90 - 110
Molybdenum	99.3	98.9	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	99.9	100	P/P	90 - 110
Silver	99.9	100	P/P	90 - 110
Thallium	97.4	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A112626
Included Lab Sample IDs: 2330412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A112633
Included Lab Sample IDs: 2330407, 2330409, 2330411

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	96.8	P/P	90 - 110
Total Alkalinity	99.5	97.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A112633
Included Lab Sample IDs: 2330407, 2330409, 2330411

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112644
Included Lab Sample IDs: 2330421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	101	P/P	95 - 105
Iron	100	102	P/P	95 - 105
Magnesium	101	103	P/P	95 - 105
Tin	98.6	98.8	P/P	95 - 105
Titanium	98.7	101	P/P	95 - 105
Vanadium	98.4	100	P/P	95 - 105
Zinc	98.7	99.7	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112649
Included Lab Sample IDs: 2330421

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	96.0	101	P/P	95 - 105

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112677
Included Lab Sample IDs: 2330420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	100	96.3	P/P	90 - 110
Tin	104	99.7	P/P	90 - 110
Titanium	96.2	95.7	P/P	90 - 110
Vanadium	100	96.8	P/P	90 - 110
Zinc	100	99.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112695
Included Lab Sample IDs: 2330420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A112705
Included Lab Sample IDs: 2330408, 2330410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112726
Included Lab Sample IDs: 2330420

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.4	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A112733
Included Lab Sample IDs: 2330408, 2330410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A112751
Included Lab Sample IDs: 2330412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A112803
Included Lab Sample IDs: 2330408, 2330410, 2330412

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A112830
Included Lab Sample IDs: 2330412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	96.9	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A112851
Included Lab Sample IDs: 2330408, 2330410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	93.2	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	96.8					4.31	
EPA 200.7 Rev. 4.4	Calcium	103	101	106				0.0219
	Calcium	108	111					1.46
	Iron	110	108	110	114			1.78
	Iron	105	107	106				0.722
	Magnesium	111	104	106				2.31
	Magnesium	107						1.33
	Strontium	96.9	95.7	97.0	104			1.25
	Strontium	103	93.3	101				4.81
	Tin	98.9	104	105	107			1.14
	Tin	104	76.2	83.1				8.57
	Titanium	104	106	104	110			1.80
	Titanium	101	96.4	100				3.29
	Vanadium	95.8	101	102	103			1.54
	Vanadium	94.5	90.5	93.6				3.36
	Zinc	104	103	104	110			0.588
	Zinc	104	94.9	98.8				4.11
EPA 200.8 Rev. 5.4	Aluminum	97.2	101	99.4	96.1			1.83
	Aluminum	99.9	112	114				1.83
	Antimony	97.9	102	101	100			1.18
	Antimony	98.1	97.7	98.6				0.950
	Arsenic	98.4	101	99.0	99.5			1.86
	Arsenic	97.5	109	111				1.80
	Beryllium	94.0	99.7	95.8	98.5			3.96
	Beryllium	90.6	109	101				6.84
	Cadmium	96.7	102	97.1	99.8			4.47
	Cadmium	96.7	96.0	95.8				0.190
	Chromium	95.6	98.8	97.7	98.3			1.04
	Chromium	95.3	96.1	96.9				0.773
	Cobalt	98.7	101	99.0	98.9			1.65
	Cobalt	97.2	109	109				0.217
	Copper	96.1	95.6	95.5	96.4			0.121
	Copper	94.9	105	103				1.10
	Lead	96.9	101	99.8	99.4			0.931
	Lead	98.9	102	104				1.38
	Manganese	96.8	103	99.8	101			1.74
	Manganese	96.8	94.9	96.5				0.889
	Molybdenum	97.0	103	100	99.2			2.69
	Molybdenum	97.7	110	110				0.774
	Nickel	96.7	99.2	98.3	97.7			0.931
	Nickel	96.5	108	109				0.186
	Selenium	97.4	98.0	96.6	96.2			1.45
	Selenium	96.2	102	103				1.16
	Silver	101	102	98.4	98.9			3.96
	Silver	97.8	90.3	91.4				1.20
	Thallium	97.0	103	102	100			0.466
	Thallium	101	104	106				1.91
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.2	98.0				0.742
	Ammonia-N	96.8	97.0	98.2				0.916
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	90.0	105				13.9
	Kjeldahl Nitrogen	102						5.05
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102				0.491
	NO2NO3-N	102	103	102				0.382
EPA 365.1 Rev. 2.0	Total-P	103	94.6	97.5				2.78

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0	Total-P	100	104	102			1.44
SM 2320 B-2011	Total Alkalinity	98.3				0.629	
	Total Alkalinity	102				2.60	
SM 2540 D-2011	TSS					7.63	
	TSS					7.50	
SM 4500-F- C-2011	Fluoride	98.4	98.1	98.7			0.489
	Fluoride	97.9	98.2	98.9			0.520
SM 5310 B-2011	Organic Carbon	95.2	93.4	92.4			0.862
	Organic Carbon	94.4	89.6	87.4			1.89

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2330407, 2330409, 2330411
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2330420, 2330421
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2330420, 2330421
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2330408, 2330410, 2330412
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2330408, 2330410, 2330412
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2330408, 2330410, 2330412
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2330408, 2330410, 2330412
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2330407, 2330409, 2330411
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2330407, 2330409, 2330411
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2330407, 2330409, 2330411
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2330408, 2330410, 2330412

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	05/27/2022			05/27/2022 14:30	Khloe J Berg	2330407
	05/27/2022			05/27/2022 14:31	Khloe J Berg	2330409
	05/27/2022			05/27/2022 14:32	Khloe J Berg	2330411
EPA 200.7 Rev. 4.4	05/27/2022	06/01/2022 10:05	Megan Whitefoot	06/06/2022 20:37	McKinley C Carter	2330421
	05/27/2022	06/01/2022 10:05	Megan Whitefoot	06/07/2022 14:39	McKinley C Carter	2330421
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 06:57	McKinley C Carter	2330420
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 07:05	McKinley C Carter	2330420
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 19:37	McKinley C Carter	2330420
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/10/2022 00:03	McKinley C Carter	2330420
EPA 200.8 Rev. 5.4	05/27/2022	06/01/2022 10:05	Megan Whitefoot	06/01/2022 18:29	Alexander Thompson	2330421
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 15:06	Alexander Thompson	2330420
	05/27/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 18:28	Alexander Thompson	2330420
EPA 350.1 Rev. 2.0	05/27/2022			06/09/2022 11:58	Judith K. Clark	2330408
	05/27/2022			06/09/2022 12:02	Judith K. Clark	2330410
	05/27/2022			06/14/2022 12:22	Ping Hua	2330412
EPA 351.2 Rev. 2.0	05/27/2022	06/10/2022 11:23	Samantha L Bates	06/13/2022 18:44	Alexandra J Mattheus	2330408
	05/27/2022	06/10/2022 11:23	Samantha L Bates	06/13/2022 18:46	Alexandra J Mattheus	2330410
	05/27/2022	06/10/2022 11:23	Samantha L Bates	06/13/2022 19:14	Alexandra J Mattheus	2330412
EPA 353.2 Rev. 2.0	05/27/2022			06/09/2022 15:41	Nathaniel J Jones	2330408
	05/27/2022			06/09/2022 15:42	Nathaniel J Jones	2330410
	05/27/2022			06/10/2022 17:23	Nathaniel J Jones	2330412
EPA 365.1 Rev. 2.0	05/27/2022	06/01/2022 16:00	Adam P Silver	06/02/2022 14:23	James L Waggerby	2330410
	05/27/2022	06/01/2022 16:00	Adam P Silver	06/02/2022 14:28	James L Waggerby	2330408
	05/27/2022	06/03/2022 15:50	Adam P Silver	06/06/2022 13:31	James L Waggerby	2330412
SM 2320 B-2011	05/27/2022			06/03/2022 06:19	Dale L. Simmons	2330411
	05/27/2022			06/03/2022 11:00	Dale L. Simmons	2330407
	05/27/2022			06/03/2022 11:13	Dale L. Simmons	2330409
SM 2540 D-2011	05/27/2022			06/01/2022 14:08	Yijie Li	2330407, 2330409, 2330411
SM 4500-F- C-2011	05/27/2022			06/03/2022 06:19	Dale L. Simmons	2330411
	05/27/2022			06/03/2022 09:06	Dale L. Simmons	2330407
	05/27/2022			06/03/2022 09:11	Dale L. Simmons	2330409
SM 5310 B-2011	05/27/2022			06/03/2022 02:02	Judith K. Clark	2330412
	05/27/2022			06/14/2022 23:27	Khloe J Berg	2330408
	05/27/2022			06/15/2022 00:32	Khloe J Berg	2330410