Chemical Analysis Report

NW-DIST-2022-09-20-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Eastern Lakes Run**
Request ID: **RQ-2022-09-19-26**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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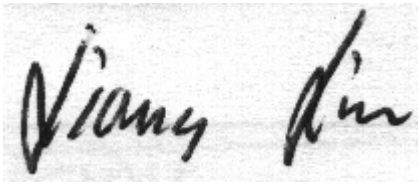
Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-OCT-2022 11:09



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: Lake Karick (Center) (also 33040210) **Collection Date/Time: 09/19/2022 12:10**

Field ID: G4NW0274 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357589	DEP SOP: NU-094-1	Color (true)	15		PCU	P419863	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P419881	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P420255	
		Sulfate	0.21	I	mg SO4/L	P420259	
	SM 2320 B-2011	Total Alkalinity	2.1	I	mg CaCO3/L	P420277	
	SM 2540 C-2011	TDS	15	U	mg/L	P420294	
	SM 2540 D-2011	TSS	2	U	mg/L	P420239	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420216	
2357591	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P420249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P420074	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P419949	
	SM 5310 B-2011	Organic Carbon	3.5		mg C/L	P420034	
2357602	EPA 200.7 Rev. 4.4	Calcium	0.85		mg/L	P419951	
		Iron	400		ug/L	P419951	
		Magnesium	0.38		mg/L	P419951	
		Potassium	0.30	U	mg/L	P419951	
		Sodium	1.4	I	mg/L	P419951	
		Strontium	2.9	I	ug/L	P419951	
		Tin	3.0	U	ug/L	P419951	
		Titanium	0.75	U	ug/L	P419951	
		Vanadium	2.0	U	ug/L	P419951	
		Zinc	5.0	U	ug/L	P419951	
	EPA 200.8 Rev. 5.4	Aluminum	41		ug/L	P419951	
		Antimony	0.050	U	ug/L	P419951	
		Arsenic	0.57		ug/L	P419951	
		Barium	4.06		ug/L	P420197	
		Beryllium	0.013	I	ug/L	P419951	
		Boron	8.4		ug/L	P419951	
		Cadmium	0.020	U	ug/L	P419951	
		Chromium	0.40	U	ug/L	P419951	
		Cobalt	0.035	I	ug/L	P419951	
		Copper	0.40	U	ug/L	P419951	
		Lead	0.20	U	ug/L	P419951	
		Manganese	5.29		ug/L	P419951	
		Molybdenum	0.15	U	ug/L	P419951	
		Nickel	0.50	U	ug/L	P419951	
		Selenium	0.20	U	ug/L	P419951	
		Silver	0.010	U	ug/L	P419951	
		Thallium	0.10	U	ug/L	P419951	
	SM 2340 B-2011	Hardness	3.7		mg/L	P419951	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Roberts Lake **Collection Date/Time: 09/19/2022 10:45**

Field ID: G3NW0447 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357585	DEP SOP: NU-094-1	Color (true)	15	A	PCU	P419863	
	EPA 180.1 Rev. 2.0	Turbidity	0.40	I	NTU	P419881	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P420255	
		Sulfate	1.7		mg SO4/L	P420259	
	SM 2320 B-2011	Total Alkalinity	1.3	I	mg CaCO3/L	P420277	
	SM 2540 C-2011	TDS	15	U	mg/L	P420294	
	SM 2540 D-2011	TSS	2	U	mg/L	P420239	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420216	
2357587	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P420248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P420073	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	2.1		mg C/L	P420034	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Kings Lake **Collection Date/Time: 09/19/2022 13:45**

Field ID: G4NW0537 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357590	DEP SOP: NU-094-1	Color (true)	9.3		PCU	P419863	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P419882	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P420255	
		Sulfate	0.70		mg SO4/L	P420259	
	SM 2320 B-2011	Total Alkalinity	1.3	I	mg CaCO3/L	P420277	
	SM 2540 C-2011	TDS	15	U	mg/L	P420294	
	SM 2540 D-2011	TSS	2	U	mg/L	P420239	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420216	
2357592	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P420249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P420077	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420156	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P419949	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P420034	
2357603	EPA 200.7 Rev. 4.4	Calcium	0.86		mg/L	P419951	
		Iron	34	I	ug/L	P419951	
		Magnesium	0.49		mg/L	P419951	
		Potassium	0.30	U	mg/L	P419951	
		Sodium	1.7	I	mg/L	P419951	
		Strontium	3.3	I	ug/L	P419951	
		Tin	3.0	U	ug/L	P419951	
		Titanium	0.75	U	ug/L	P419951	
		Vanadium	2.0	U	ug/L	P419951	
		Zinc	5.0	U	ug/L	P419951	
	EPA 200.8 Rev. 5.4	Aluminum	8.5	I	ug/L	P419951	
		Antimony	0.050	U	ug/L	P419951	
		Arsenic	1.04		ug/L	P419951	
		Barium	2.92		ug/L	P420197	
		Beryllium	0.010	U	ug/L	P419951	
		Boron	10.7		ug/L	P419951	
		Cadmium	0.020	U	ug/L	P419951	
		Chromium	0.40	U	ug/L	P419951	
		Cobalt	0.020	U	ug/L	P419951	
		Copper	0.40	U	ug/L	P419951	
		Lead	0.20	U	ug/L	P419951	
		Manganese	4.70		ug/L	P419951	
		Molybdenum	0.15	U	ug/L	P419951	
		Nickel	0.50	U	ug/L	P419951	
		Selenium	0.20	U	ug/L	P419951	
		Silver	0.010	U	ug/L	P419951	
		Thallium	0.10	U	ug/L	P419951	
	SM 2340 B-2011	Hardness	4.2		mg/L	P419951	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Holly Lake **Collection Date/Time: 09/19/2022 14:15**

Field ID: G4NW0517 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2357586	DEP SOP: NU-094-1	Color (true)	13		PCU	P419863	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P419881	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P420090	
		Sulfate	0.37	I	mg SO4/L	P420095	
	SM 2320 B-2011	Total Alkalinity	2.0	I	mg CaCO3/L	P420277	
	SM 2540 C-2011	TDS	15	U	mg/L	P420294	
	SM 2540 D-2011	TSS	2	U	mg/L	P420239	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P420216	
2357588	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P420249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P420077	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420157	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P419948	
	SM 5310 B-2011	Organic Carbon	4.3		mg C/L	P420034	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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: DEP SOP: NU-094-1
Batch ID: P419863

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419881

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419882

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419951

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
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 200.8 Rev. 5.4
Batch ID: P419951

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
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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420197

Component	Result	Code	Units
Barium	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420090

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420095

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420255

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420259

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420249

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

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: P420077

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420157

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419949

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

Reference Method: SM 2320 B-2011
Batch ID: P420277

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

Reference Method: SM 2540 C-2011
Batch ID: P420294

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P420239

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P420034

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P419863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419881

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419882

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	106		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	98.3		P	85 - 115
Sodium	102		P	85 - 115
Strontium	102		P	85 - 115
Tin	101		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	105		P	85 - 115
Beryllium	97.3		P	85 - 115
Boron	100		P	85 - 115
Cadmium	98.4		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	99.6		P	85 - 115
Copper	103		P	85 - 115
Lead	98.3		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	98.6		P	85 - 115
Nickel	104		P	85 - 115
Selenium	102		P	85 - 115
Silver	97.4		P	85 - 115
Thallium	96.9		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420197

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420090

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420095

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420255

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420259

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420249

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420077

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420157

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419949

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

Reference Method: SM 2320 B-2011
Batch ID: P420277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357602	Calcium	111	111	P/P	80 - 120
2357602	Iron	111	112	P/P	80 - 120
2357602	Magnesium	108	110	P/P	80 - 120
2357602	Potassium	104	106	P/P	80 - 120
2357602	Sodium	107	107	P/P	80 - 120
2357602	Strontium	107	107	P/P	80 - 120
2357602	Tin	107	108	P/P	80 - 120
2357602	Titanium	109	110	P/P	80 - 120
2357602	Vanadium	107	109	P/P	80 - 120
2357602	Zinc	106	108	P/P	80 - 120
2357603	Calcium	106		P	80 - 120
2357603	Iron	107		P	80 - 120
2357603	Magnesium	104		P	80 - 120
2357603	Potassium	104		P	80 - 120
2357603	Sodium	103		P	80 - 120
2357603	Strontium	103		P	80 - 120
2357603	Tin	103		P	80 - 120
2357603	Titanium	104		P	80 - 120
2357603	Vanadium	103		P	80 - 120
2357603	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357602	Aluminum	99.0	101	P/P	80 - 120
2357602	Antimony	101	100	P/P	80 - 120
2357602	Arsenic	101	101	P/P	80 - 120
2357602	Beryllium	98.1	95.7	P/P	80 - 120
2357602	Boron	98.9	102	P/P	80 - 120
2357602	Cadmium	98.0	98.3	P/P	80 - 120
2357602	Chromium	101	101	P/P	80 - 120
2357602	Cobalt	95.9	96.0	P/P	80 - 120
2357602	Copper	100	101	P/P	80 - 120
2357602	Lead	97.1	96.7	P/P	80 - 120
2357602	Manganese	101	101	P/P	80 - 120
2357602	Molybdenum	96.5	97.1	P/P	80 - 120
2357602	Nickel	99.4	99.9	P/P	80 - 120
2357602	Selenium	99.4	100	P/P	80 - 120
2357602	Silver	95.8	96.0	P/P	80 - 120
2357602	Thallium	97.5	97.3	P/P	80 - 120
2357603	Aluminum	98.5		P	80 - 120
2357603	Antimony	102		P	80 - 120
2357603	Arsenic	102		P	80 - 120
2357603	Beryllium	102		P	80 - 120
2357603	Boron	103		P	80 - 120
2357603	Cadmium	99.8		P	80 - 120
2357603	Chromium	101		P	80 - 120
2357603	Cobalt	94.0		P	80 - 120
2357603	Copper	99.0		P	80 - 120
2357603	Lead	96.0		P	80 - 120
2357603	Manganese	101		P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357603	Molybdenum	96.9		P	80 - 120
2357603	Nickel	97.1		P	80 - 120
2357603	Selenium	99.6		P	80 - 120
2357603	Silver	97.1		P	80 - 120
2357603	Thallium	98.0		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359311	Barium	103	104	P/P	80 - 120
2359312	Barium	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357378	Chloride	105		P	90 - 110
2357457	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357378	Sulfate	102		P	90 - 110
2357457	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357609	Chloride	93.2		P	90 - 110
2357656	Chloride	95.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357609	Sulfate	95.5		P	90 - 110
2357656	Sulfate	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357534	Ammonia-N	99.8	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357591	Ammonia-N	102	102	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357554	NO2NO3-N	98.3	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357588	NO2NO3-N	99.0	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357588	Total-P	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357592	Total-P	105	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357589	Fluoride	99.9	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2357640	Organic Carbon	100	98.5	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P419863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357585	Color (true)	0.0133	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357375	Turbidity	4.92	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357608	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P419951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357602	Calcium	0.213	Spike	P	0 - 20
2357602	Iron	0.831	Spike	P	0 - 20
2357602	Magnesium	1.07	Spike	P	0 - 20
2357602	Potassium	1.67	Spike	P	0 - 20
2357602	Sodium	0.0515	Spike	P	0 - 20
2357602	Strontium	0.429	Spike	P	0 - 20
2357602	Tin	1.21	Spike	P	0 - 20
2357602	Titanium	1.26	Spike	P	0 - 20
2357602	Vanadium	1.55	Spike	P	0 - 20
2357602	Zinc	1.50	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357602	Aluminum	2.06	Spike	P	0 - 20
2357602	Antimony	1.03	Spike	P	0 - 20
2357602	Arsenic	0.428	Spike	P	0 - 20
2357602	Beryllium	2.43	Spike	P	0 - 20
2357602	Boron	2.49	Spike	P	0 - 20
2357602	Cadmium	0.250	Spike	P	0 - 20
2357602	Chromium	0.0687	Spike	P	0 - 20
2357602	Cobalt	0.159	Spike	P	0 - 20
2357602	Copper	0.669	Spike	P	0 - 20
2357602	Lead	0.384	Spike	P	0 - 20
2357602	Manganese	0.263	Spike	P	0 - 20
2357602	Molybdenum	0.647	Spike	P	0 - 20
2357602	Nickel	0.523	Spike	P	0 - 20
2357602	Selenium	0.589	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P419951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357602	Silver	0.174	Spike	P	0 - 20
2357602	Thallium	0.258	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P420197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359311	Barium	0.309	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357378	Chloride	0.473	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357378	Sulfate	0.755	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357609	Chloride	0.245	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P420259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357609	Sulfate	0.327	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357534	Ammonia-N	0.551	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357591	Ammonia-N	0.196	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357731	Kjeldahl Nitrogen	2.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357445	Kjeldahl Nitrogen	12.5	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357741	Kjeldahl Nitrogen	3.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357554	NO2NO3-N	0.449	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357588	NO2NO3-N	2.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357588	Total-P	2.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357592	Total-P	0.116	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P420277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357608	Total Alkalinity	0.499	Sample	P	0 - 3.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-2011
Batch ID: P420294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357471	TDS	1.47	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P420216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357589	Fluoride	0.479	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P420034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2357640	Organic Carbon	1.06	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A114832
Included Lab Sample IDs: 2357585, 2357586, 2357589, 2357590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A114837
Included Lab Sample IDs: 2357585, 2357586, 2357589, 2357590

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114857
Included Lab Sample IDs: 2357586

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

Reference Method: SM 5310 B-2011
Run ID: A114912
Included Lab Sample IDs: 2357587, 2357588, 2357591, 2357592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.2	P/P	90 - 110
Organic Carbon	96.2	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A114921
Included Lab Sample IDs: 2357587, 2357588, 2357591, 2357592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A114930
Included Lab Sample IDs: 2357602, 2357603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	101	P/P	90 - 110
Aluminum	101	100	P/P	90 - 110
Antimony	98.6	98.6	P/P	90 - 110
Antimony	98.6	98.5	P/P	90 - 110
Arsenic	101	98.9	P/P	90 - 110
Arsenic	102	101	P/P	90 - 110
Beryllium	98.9	99.3	P/P	90 - 110
Beryllium	99.3	99.9	P/P	90 - 110
Boron	95.3	98.0	P/P	90 - 110
Boron	98.0	97.0	P/P	90 - 110
Cadmium	97.2	99.0	P/P	90 - 110
Cadmium	99.0	98.7	P/P	90 - 110
Chromium	96.5	98.8	P/P	90 - 110
Chromium	98.8	99.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A114930
Included Lab Sample IDs: 2357602, 2357603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	95.5	92.4	P/P	90 - 110
Cobalt	96.3	95.5	P/P	90 - 110
Copper	100	99.3	P/P	90 - 110
Copper	99.3	95.6	P/P	90 - 110
Manganese	96.9	99.4	P/P	90 - 110
Manganese	99.4	98.3	P/P	90 - 110
Molybdenum	97.9	97.2	P/P	90 - 110
Molybdenum	98.6	97.9	P/P	90 - 110
Nickel	101	99.3	P/P	90 - 110
Nickel	99.3	95.0	P/P	90 - 110
Selenium	100	101	P/P	90 - 110
Selenium	101	99.5	P/P	90 - 110
Silver	95.5	95.7	P/P	90 - 110
Silver	95.7	94.8	P/P	90 - 110
Thallium	95.6	97.5	P/P	90 - 110
Thallium	97.5	96.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A114948
Included Lab Sample IDs: 2357602, 2357603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	97.0	95.4	P/P	90 - 110
Lead	97.1	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A114957
Included Lab Sample IDs: 2357587, 2357588, 2357591, 2357592

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A114974
Included Lab Sample IDs: 2357587, 2357588, 2357591, 2357592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	109	P/P	90 - 110
Kjeldahl Nitrogen	108	96.7	P/P	90 - 110
Kjeldahl Nitrogen	109	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A114980
Included Lab Sample IDs: 2357585, 2357586, 2357589, 2357590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	103	P/P	90 - 110
Fluoride	97.1	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A114997
Included Lab Sample IDs: 2357587, 2357588, 2357591, 2357592

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114999
Included Lab Sample IDs: 2357585, 2357589, 2357590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.5	P/P	90 - 110
Sulfate	98.5	99.3	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A115007
Included Lab Sample IDs: 2357585, 2357586, 2357589, 2357590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A115037
Included Lab Sample IDs: 2357602, 2357603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Magnesium	99.6	101	P/P	90 - 110
Potassium	97.1	98.4	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Strontium	94.8	96.7	P/P	90 - 110
Tin	95.9	99.7	P/P	90 - 110
Titanium	95.8	99.9	P/P	90 - 110
Vanadium	95.9	99.2	P/P	90 - 110
Zinc	94.9	97.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A115038
Included Lab Sample IDs: 2357602, 2357603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.9	99.7	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
DEP SOP: NU-094-1	Color (true)	103					0.0133	
EPA 180.1 Rev. 2.0	Turbidity	100					4.92	
	Turbidity	101					10.7	
EPA 200.7 Rev. 4.4	Calcium	105	111	111	106			0.213
	Iron	106	111	112	107			0.831
	Magnesium	103	108	110	104			1.07
	Potassium	98.3	104	106	104			1.67
	Sodium	102	107	107	103			0.0515
	Strontium	102	107	107	103			0.429
	Tin	101	107	108	103			1.21
	Titanium	103	109	110	104			1.26
	Vanadium	101	107	109	103			1.55
	Zinc	101	106	108	106			1.50
EPA 200.8 Rev. 5.4	Aluminum	100	99.0	101	98.5			2.06
	Antimony	103	101	100	102			1.03
	Arsenic	105	101	101	102			0.428
	Barium	102	103	104	104			0.309
	Beryllium	97.3	98.1	95.7	102			2.43
	Boron	100	98.9	102	103			2.49
	Cadmium	98.4	98.0	98.3	99.8			0.250
	Chromium	102	101	101	101			0.0687
	Cobalt	99.6	95.9	96.0	94.0			0.159
	Copper	103	100	101	99.0			0.669
	Lead	98.3	97.1	96.7	96.0			0.384
	Manganese	101	101	101	101			0.263
	Molybdenum	98.6	96.5	97.1	96.9			0.647
	Nickel	104	99.4	99.9	97.1			0.523
	Selenium	102	99.4	100	99.6			0.589
	Silver	97.4	95.8	96.0	97.1			0.174
	Thallium	96.9	97.5	97.3	98.0			0.258
EPA 300.0 Rev. 2.1	Chloride	105	105	102			0.473	
	Chloride	98.9	93.2	95.0			0.245	
	Sulfate	104	102	101			0.755	
	Sulfate	97.5	95.5	95.8			0.327	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	99.8	99.2				0.551
	Ammonia-N	97.4	102	102				0.196
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102						2.49
	Kjeldahl Nitrogen	107						12.5
	Kjeldahl Nitrogen	105						3.12
EPA 353.2 Rev. 2.0	NO2NO3-N	103	98.3	98.8				0.449
	NO2NO3-N	103	99.0	101				2.00
EPA 365.1 Rev. 2.0	Total-P	104	103	106				2.52
	Total-P	104	105	105				0.116
SM 2320 B-2011	Total Alkalinity	101					0.499	
SM 2540 C-2011	TDS						1.47	
SM 4500-F- C-2011	Fluoride	96.0	99.9	100				0.479
SM 5310 B-2011	Organic Carbon	96.2	100	98.5				1.06

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2357585, 2357586, 2357589, 2357590
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2357585, 2357586, 2357589, 2357590

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2357602, 2357603
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2357602, 2357603
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2357585, 2357586, 2357589, 2357590
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2357585, 2357586, 2357589, 2357590
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2357587, 2357588, 2357591, 2357592
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2357587, 2357588, 2357591, 2357592
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2357587, 2357588, 2357591, 2357592
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2357587, 2357588, 2357591, 2357592
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2357585, 2357586, 2357589, 2357590
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2357602, 2357603
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2357585, 2357586, 2357589, 2357590
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2357585, 2357586, 2357589, 2357590
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2357585, 2357586, 2357589, 2357590
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2357587, 2357588, 2357591, 2357592

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	09/20/2022			09/20/2022 15:57	Anna M. Plaviak	2357585, 2357586
	09/20/2022			09/20/2022 15:58	Anna M. Plaviak	2357589, 2357590
EPA 180.1 Rev. 2.0	09/20/2022			09/20/2022 13:40	Chandler E Cox	2357585
	09/20/2022			09/20/2022 13:41	Chandler E Cox	2357586
	09/20/2022			09/20/2022 13:42	Chandler E Cox	2357589
	09/20/2022			09/20/2022 13:47	Chandler E Cox	2357590
EPA 200.7 Rev. 4.4	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/30/2022 00:14	McKinley C Carter	2357602
	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/30/2022 00:40	McKinley C Carter	2357603
EPA 200.8 Rev. 5.4	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/23/2022 15:53	Emily M Philpot	2357602
	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/23/2022 18:08	Emily M Philpot	2357603
	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/26/2022 13:53	Emily M Philpot	2357602
	09/20/2022	09/22/2022 09:40	Megan Whitefoot	09/26/2022 15:16	Emily M Philpot	2357603
	09/20/2022	09/28/2022 10:45	Megan Whitefoot	09/29/2022 15:55	Emily M Philpot	2357602
	09/20/2022	09/28/2022 10:45	Megan Whitefoot	09/29/2022 16:04	Emily M Philpot	2357603
EPA 300.0 Rev. 2.1	09/20/2022			09/23/2022 15:39	Anna M. Plaviak	2357586
	09/20/2022			09/27/2022 12:56	Anna M. Plaviak	2357585
	09/20/2022			09/27/2022 13:12	Anna M. Plaviak	2357589
	09/20/2022			09/27/2022 13:27	Anna M. Plaviak	2357590
EPA 350.1 Rev. 2.0	09/20/2022			09/28/2022 13:27	Ping Hua	2357587
	09/20/2022			09/28/2022 13:41	Ping Hua	2357591
	09/20/2022			09/28/2022 13:45	Ping Hua	2357588
	09/20/2022			09/28/2022 13:46	Ping Hua	2357592
EPA 351.2 Rev. 2.0	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 10:54	Alexandra J Mattheus	2357587
	09/20/2022	09/26/2022 10:38	Alexandra J Mattheus	09/27/2022 11:28	Alexandra J Mattheus	2357591
	09/20/2022	09/26/2022 13:48	Alexandra J Mattheus	09/27/2022 12:13	Alexandra J Mattheus	2357588
	09/20/2022	09/26/2022 13:48	Alexandra J Mattheus	09/27/2022 12:14	Alexandra J Mattheus	2357592
EPA 353.2 Rev. 2.0	09/20/2022			09/27/2022 11:17	Judith K. Clark	2357587
	09/20/2022			09/27/2022 11:19	Judith K. Clark	2357591
	09/20/2022			09/27/2022 11:20	Judith K. Clark	2357592
	09/20/2022			09/27/2022 11:29	Judith K. Clark	2357588
EPA 365.1 Rev. 2.0	09/20/2022	09/22/2022 14:19	Adam P Silver	09/23/2022 14:39	James L Waggerby	2357588
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/23/2022 14:41	James L Waggerby	2357587
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/23/2022 14:43	James L Waggerby	2357592
	09/20/2022	09/22/2022 14:19	Adam P Silver	09/23/2022 14:44	James L Waggerby	2357591
SM 2320 B-2011	09/20/2022			09/29/2022 02:46	Adam P Silver	2357585
	09/20/2022			09/29/2022 02:54	Adam P Silver	2357586
	09/20/2022			09/29/2022 03:01	Adam P Silver	2357589
	09/20/2022			09/29/2022 03:08	Adam P Silver	2357590
SM 2340 B-2011	09/20/2022			09/30/2022 00:14	McKinley C Carter	2357602
	09/20/2022			09/30/2022 00:40	McKinley C Carter	2357603

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2011	09/20/2022			09/21/2022 15:39	Yijie Li	2357585, 2357586, 2357589, 2357590
SM 2540 D-2011	09/20/2022			09/21/2022 15:39	Yijie Li	2357585, 2357586, 2357589, 2357590
SM 4500-F- C-2011	09/20/2022			09/28/2022 05:10	Adam P Silver	2357589
	09/20/2022			09/28/2022 06:02	Adam P Silver	2357585
	09/20/2022			09/28/2022 06:09	Adam P Silver	2357586
	09/20/2022			09/28/2022 06:33	Adam P Silver	2357590
SM 5310 B-2011	09/20/2022			09/22/2022 20:28	Khloe J Berg	2357587
	09/20/2022			09/22/2022 21:09	Khloe J Berg	2357588
	09/20/2022			09/22/2022 21:27	Khloe J Berg	2357591
	09/20/2022			09/22/2022 21:40	Khloe J Berg	2357592