Chemical Analysis Report

BSSP-2021-09-21-01

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

Event Description: **Reference Lake Sampling**
Request ID: **RQ-2021-08-23-08**
Customer: **BSSP**
Project ID: **LAKESREF**

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2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
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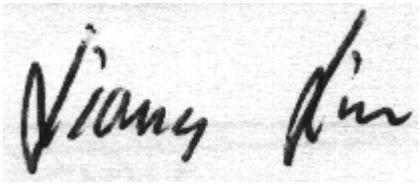
Date Certified: 13-OCT-2021 13:58



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: Otter Lake **Collection Date/Time: 09/21/2021 11:25**

Field ID: Otter Ref Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277184	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P404146	
		Sulfate	2.2		mg SO4/L	P404147	
	SM 2120 B-2011	Color (true)	400		PCU	P404063	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P404208	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P404211	
2277185	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P404121	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P404122	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P404161	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P404102	
2277186	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P404011	
2277189	EPA 200.7 Rev. 4.4	Calcium	2.62		mg/L	P404091	
		Iron	410		ug/L	P404091	
		Magnesium	1.67		mg/L	P404091	
		Potassium	0.58	I	mg/L	P404091	
		Sodium	12.8		mg/L	P404091	
		Zinc	5.0	U	ug/L	P404091	
	EPA 200.8 Rev. 5.4	Arsenic	0.30		ug/L	P404091	
		Beryllium	0.022	I	ug/L	P404091	
		Cadmium	0.020	U	ug/L	P404091	
		Chromium	0.40	U	ug/L	P404091	
		Copper	0.40	U	ug/L	P404091	
		Lead	0.96		ug/L	P404091	
		Nickel	0.50	U	ug/L	P404091	
		Silver	0.010	U	ug/L	P404091	

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.
EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/27/2021.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404091

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404091

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404121

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404161

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: P404102

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404011

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

Reference Method: SM 2120 B-2011
Batch ID: P404063

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P404208

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

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	109		P	85 - 115
Magnesium	112		P	85 - 115
Potassium	105		P	85 - 115
Sodium	99.9		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.4		P	85 - 115
Beryllium	94.1		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	97.3		P	85 - 115
Copper	97.2		P	85 - 115
Lead	97.2		P	85 - 115
Nickel	97.4		P	85 - 115
Silver	100		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404122

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: P404161

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: P404102

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: P404011

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

Reference Method: SM 2120 B-2011
Batch ID: P404063

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.7		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P404208

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

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	93 - 104

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276759	Calcium	99.1		P	80 - 120
2276759	Iron	105		P	80 - 120
2276759	Magnesium	100		P	80 - 120
2276759	Potassium	102		P	80 - 120
2276759	Sodium	99.9		P	80 - 120
2276759	Zinc	102		P	80 - 120
2276979	Calcium	102		P	80 - 120
2276979	Iron	111	110	P/P	80 - 120
2276979	Magnesium	111	111	P/P	80 - 120
2276979	Potassium	104	103	P/P	80 - 120
2276979	Sodium	101		P	80 - 120
2276979	Zinc	90.2	92.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276759	Arsenic	97.2		P	80 - 120
2276759	Beryllium	90.2		P	80 - 120
2276759	Cadmium	99.2		P	80 - 120
2276759	Chromium	96.0		P	80 - 120
2276759	Copper	90.9		P	80 - 120
2276759	Lead	94.6		P	80 - 120
2276759	Nickel	93.0		P	80 - 120
2276759	Silver	96.6		P	80 - 120
2276979	Arsenic	102	102	P/P	80 - 120
2276979	Beryllium	95.1	94.0	P/P	80 - 120
2276979	Cadmium	102	99.7	P/P	80 - 120
2276979	Chromium	101	101	P/P	80 - 120
2276979	Copper	98.6	97.7	P/P	80 - 120
2276979	Lead	98.7	97.8	P/P	80 - 120
2276979	Nickel	98.0	98.4	P/P	80 - 120
2276979	Silver	99.9	99.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277057	Chloride	95.3		P	90 - 110
2277424	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277057	Sulfate	95.8		P	90 - 110
2277424	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404121

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276888	Ammonia-N	96.4	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277177	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2275693	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277279	O-Phosphate-P	98.5	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277537	Fluoride	98.8	99.8	P/P	92 - 107

Quality Assurance Report
Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276979	Calcium	0.0799	Spike	P	0 - 20
2276979	Iron	0.530	Spike	P	0 - 20
2276979	Magnesium	0.0115	Spike	P	0 - 20
2276979	Potassium	1.13	Spike	P	0 - 20
2276979	Sodium	0.0303	Spike	P	0 - 20
2276979	Zinc	1.91	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276979	Arsenic	0.133	Spike	P	0 - 20
2276979	Beryllium	1.12	Spike	P	0 - 20
2276979	Cadmium	2.04	Spike	P	0 - 20
2276979	Chromium	0.151	Spike	P	0 - 20
2276979	Copper	0.854	Spike	P	0 - 20
2276979	Lead	0.883	Spike	P	0 - 20
2276979	Nickel	0.329	Spike	P	0 - 20
2276979	Silver	0.818	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277057	Chloride	0.286	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277057	Sulfate	0.485	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276888	Ammonia-N	0.709	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277175	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277177	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2275693	Total-P	0.370	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277279	O-Phosphate-P	0.515	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P404063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277407	Color (true)	1.20	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P404208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277537	Total Alkalinity	2.94	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P404211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277537	Fluoride	0.948	Spike	P	0 - 2.1

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A107913
Included Lab Sample IDs: 2277186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	99.1	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A107943
Included Lab Sample IDs: 2277184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.5	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A107953
Included Lab Sample IDs: 2277184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	99.6	P/P	90 - 110
Sulfate	99.0	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A107961
Included Lab Sample IDs: 2277185

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A107976
Included Lab Sample IDs: 2277185

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: A107977
Included Lab Sample IDs: 2277185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A107989
Included Lab Sample IDs: 2277185

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A107991
Included Lab Sample IDs: 2277189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.5	96.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A107991
Included Lab Sample IDs: 2277189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	99.7	98.9	P/P	90 - 110
Chromium	95.2	93.4	P/P	90 - 110
Copper	94.5	93.0	P/P	90 - 110
Lead	93.3	92.5	P/P	90 - 110
Nickel	93.7	91.7	P/P	90 - 110
Silver	97.7	97.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A107992
Included Lab Sample IDs: 2277189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A107996
Included Lab Sample IDs: 2277184

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

Reference Method: SM 4500 F-C-2011
Run ID: A107996
Included Lab Sample IDs: 2277184

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A108011
Included Lab Sample IDs: 2277189

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	96.0	97.3	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 200.7 Rev. 4.4	Calcium	101	99.1	102				0.0799
	Iron	109	105	111	110			0.530
	Magnesium	112	100	111	111			0.0115
	Potassium	105	102	104	103			1.13
	Sodium	99.9	99.9	101				0.0303
	Zinc	101	102	90.2	92.2			1.91
EPA 200.8 Rev. 5.4	Arsenic	99.4	102	102	97.2			0.133
	Beryllium	94.1	95.1	94.0	90.2			1.12
	Cadmium	100	102	99.7	99.2			2.04
	Chromium	97.3	101	101	96.0			0.151
	Copper	97.2	98.6	97.7	90.9			0.854
	Lead	97.2	98.7	97.8	94.6			0.883
	Nickel	97.4	98.0	98.4	93.0			0.329
	Silver	100	99.9	99.1	96.6			0.818
EPA 300.0 Rev. 2.1	Chloride	97.8	95.3	99.0			0.286	
	Sulfate	97.3	95.8	98.1			0.485	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	96.4	97.2				0.709
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102						3.15
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	100				0.496
EPA 365.1 Rev. 2.0	Total-P	103	106	107				0.370
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	98.5	99.1				0.515
SM 2120 B-2011	Color (true)	98.7					1.20	
SM 2320 B-2011	Total Alkalinity	102					2.94	
SM 4500 F-C-2011	Fluoride	97.8	98.8	99.8				0.948

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	2277189
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2277189
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2277184
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2277184
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2277185
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2277185
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2277185
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2277185
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2277186
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2277184
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2277184
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2277184

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	09/21/2021	09/23/2021 11:00	Emily M Philpot	09/24/2021 16:55	Josef B Mick	2277189
EPA 200.8 Rev. 5.4	09/21/2021	09/23/2021 11:00	Emily M Philpot	09/24/2021 20:26	Alexander Thompson	2277189
	09/21/2021	09/23/2021 11:00	Emily M Philpot	09/27/2021 11:26	Alexander Thompson	2277189
EPA 300.0 Rev. 2.1	09/21/2021			09/23/2021 16:12	Roberta Tatti	2277184
EPA 350.1 Rev. 2.0	09/21/2021			09/23/2021 13:09	Ping Hua	2277185
EPA 351.2 Rev. 2.0	09/21/2021	09/23/2021 12:39	Benjamin T. Nordmann	09/24/2021 10:28	Alexandra J Mattheus	2277185
EPA 353.2 Rev. 2.0	09/21/2021			09/24/2021 10:14	Beverly Y. Sanders	2277185
EPA 365.1 Rev. 2.0	09/21/2021	09/23/2021 12:05	Simonne.V. Calhoun	09/24/2021 16:13	Sarah A Nixon	2277185
EPA 365.1 Rev. 2.0 dissolved	09/21/2021			09/21/2021 15:40	James L Waggerby	2277186
SM 2120 B-2011	09/21/2021			09/22/2021 15:53	Benjamin T. Nordmann	2277184
SM 2320 B-2011	09/21/2021			09/23/2021 19:24	Dale L. Simmons	2277184
SM 4500 F-C-2011	09/21/2021			09/23/2021 19:24	Dale L. Simmons	2277184