

Chemical Analysis Report

NE-DIST-2021-03-26-01

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

Event Description: **St.Augustine**
Request ID: **RQ-2021-03-22-13**
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: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 16-APR-2021 09:46



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: MOULTRIE CR @ US 1

Collection Date/Time: 03/25/2021 11:05

Field ID: 27010055

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2233864	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P395558	
	EPA 300.0 Rev. 2.1	Bromide	37		mg Br/L	P396249	
	SM 2320 B-2011	Total Alkalinity	114		mg CaCO3/L	P395641	
	SM 2540 D-2011	TSS	10		mg/L	P396076	
	SM 4500 F-C-2011	Fluoride	0.66		mg F/L	P395644	
2233865	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P395911	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P395872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P395595	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P395886	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P395844	
2233866	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P395550	
2233900	EPA 200.7 Rev. 4.4	Calcium	240		mg/L	P395611	
		Chromium	5.4	I	ug/L	P395611	
		Iron	310	I	ug/L	P395611	
		Magnesium	641		mg/L	P395611	
		Manganese	17		ug/L	P395611	
		Zinc	15	U	ug/L	P395611	
	EPA 200.8 Rev. 5.4	Aluminum	270		ug/L	P395611	
		Antimony	0.20	U	ug/L	P395611	
		Arsenic	1.99		ug/L	P395611	
		Beryllium	0.10	U	ug/L	P395611	
		Cadmium	0.080	U	ug/L	P395611	
		Copper	2.5	I	ug/L	P395611	
		Lead	0.80	U	ug/L	P395611	
		Nickel	2.0	U	ug/L	P395611	
		Selenium	0.80	U	ug/L	P395611	
		Silver	0.040	U	ug/L	P395611	
		Thallium	0.40	U	ug/L	P395611	

Ref. Method and Comment:

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

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395558

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395611

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395611

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
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395595

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: P395886

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

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

Reference Method: SM 2320 B-2011
Batch ID: P395641

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

Reference Method: SM 2540 D-2011
Batch ID: P396076

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395844

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Chromium	97.5		P	85 - 115
Iron	105		P	85 - 115
Magnesium	99.3		P	85 - 115
Manganese	103		P	85 - 115
Zinc	99.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.1		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	96.7		P	85 - 115
Beryllium	88.0		P	85 - 115
Cadmium	98.6		P	85 - 115
Copper	96.8		P	85 - 115
Lead	99.5		P	85 - 115
Nickel	98.3		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	103		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396249

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P395911

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P395872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395595

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.7		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P395641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.0		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P395844

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233660	Chromium	94.4	92.5	P/P	70 - 130
2233660	Iron	103	98.8	P/P	70 - 130
2233660	Manganese	100	97.0	P/P	70 - 130
2233660	Zinc	101	100	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233660	Aluminum	101	100	P/P	70 - 130
2233660	Antimony	104	103	P/P	70 - 130
2233660	Arsenic	103	104	P/P	70 - 130
2233660	Beryllium	107	106	P/P	70 - 130
2233660	Cadmium	94.7	95.5	P/P	70 - 130
2233660	Copper	104	102	P/P	70 - 130
2233660	Lead	99.7	99.7	P/P	70 - 130
2233660	Nickel	106	106	P/P	70 - 130
2233660	Selenium	102	101	P/P	70 - 130
2233660	Silver	94.3	91.0	P/P	70 - 130
2233660	Thallium	104	105	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233639	Bromide	99.0	97.5	P/P	90 - 110
2233803	Bromide	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2234560	Ammonia-N	97.6	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P395872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233696	Kjeldahl Nitrogen	97.2	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P395595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233613	NO2NO3-N	96.9	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P395886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233956	Total-P	92.4	92.6	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233866	O-Phosphate-P	98.0	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233955	Fluoride	94.2	94.9	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P395844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2233343	Organic Carbon	87.2	87.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P395558

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233856	Turbidity	6.00	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395611

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233660	Calcium	3.70	Spike	P	0 - 20
2233660	Chromium	2.02	Spike	P	0 - 20
2233660	Iron	3.10	Spike	P	0 - 20
2233660	Magnesium	3.89	Spike	P	0 - 20
2233660	Manganese	2.30	Spike	P	0 - 20
2233660	Zinc	0.493	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395611

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233660	Aluminum	0.159	Spike	P	0 - 20
2233660	Antimony	0.963	Spike	P	0 - 20
2233660	Arsenic	0.957	Spike	P	0 - 20
2233660	Beryllium	0.423	Spike	P	0 - 20
2233660	Cadmium	0.838	Spike	P	0 - 20
2233660	Copper	2.08	Spike	P	0 - 20
2233660	Lead	0.0234	Spike	P	0 - 20
2233660	Nickel	0.394	Spike	P	0 - 20
2233660	Selenium	0.635	Spike	P	0 - 20
2233660	Silver	3.55	Spike	P	0 - 20
2233660	Thallium	1.21	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396249

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233639	Bromide	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P395911

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234560	Ammonia-N	0.767	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P395872

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233696	Kjeldahl Nitrogen	1.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233613	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233956	Total-P	0.182	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233866	O-Phosphate-P	0.156	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P395641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233955	Total Alkalinity	0.353	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P395644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233955	Fluoride	0.457	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2233343	Organic Carbon	0.507	Spike	P	0 - 20

* 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: A104301

Included Lab Sample IDs: 2233866

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104305

Included Lab Sample IDs: 2233864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104327

Included Lab Sample IDs: 2233865

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

Reference Method: SM 2320 B-2011

Run ID: A104346

Included Lab Sample IDs: 2233864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	108	98.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104346

Included Lab Sample IDs: 2233864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.2	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104403

Included Lab Sample IDs: 2233900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	106	P/P	90 - 110
Antimony	97.8	99.1	P/P	90 - 110
Arsenic	98.9	99.5	P/P	90 - 110
Beryllium	102	103	P/P	90 - 110
Cadmium	96.8	97.1	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	98.7	98.6	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	98.8	100	P/P	90 - 110
Silver	95.2	95.7	P/P	90 - 110
Thallium	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104442

Included Lab Sample IDs: 2233865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	94.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104465

Included Lab Sample IDs: 2233865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104493

Included Lab Sample IDs: 2233865

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104501

Included Lab Sample IDs: 2233865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104546

Included Lab Sample IDs: 2233864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	95.8	98.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104609

Included Lab Sample IDs: 2233900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	100	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Iron	101	100	P/P	90 - 110
Magnesium	96.5	96.4	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Zinc	105	105	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.00	
EPA 200.7 Rev. 4.4	Calcium	104					3.70
	Chromium	97.5	94.4	92.5			2.02
	Iron	105	103	98.8			3.10
	Magnesium	99.3					3.89
	Manganese	103	100	97.0			2.30
	Zinc	99.7	101	100			0.493
EPA 200.8 Rev. 5.4	Aluminum	98.1	101	100			0.159
	Antimony	102	104	103			0.963
	Arsenic	96.7	103	104			0.957
	Beryllium	88.0	107	106			0.423
	Cadmium	98.6	94.7	95.5			0.838
	Copper	96.8	104	102			2.08
	Lead	99.5	99.7	99.7			0.0234
	Nickel	98.3	106	106			0.394
	Selenium	97.6	102	101			0.635
	Silver	103	94.3	91.0			3.55
	Thallium	105	104	105			1.21
EPA 300.0 Rev. 2.1	Bromide	101	99.0	97.5	100		1.18
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	97.6	98.6			0.767
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.1	97.2	98.4			1.12
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	96.9	96.9			0.0
EPA 365.1 Rev. 2.0	Total-P	99.7	92.4	92.6			0.182
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	98.0	97.8			0.156
SM 2320 B-2011	Total Alkalinity	101				0.353	
SM 4500 F-C-2011	Fluoride	94.0	94.2	94.9			0.457
SM 5310 B-2011	Organic Carbon	95.8	87.2	87.8			0.507

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2233864
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2233900
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2233900
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2233864
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2233865
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2233865
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2233865
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2233865
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2233866
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2233864
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2233864
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2233864
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2233865

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	03/26/2021			03/26/2021 14:46	Yen Ta	2233864
EPA 200.7 Rev. 4.4	03/26/2021	03/29/2021 15:05	Elliott D. Healy	04/10/2021 05:35	Betina Topolski	2233900
	03/26/2021	03/29/2021 15:05	Elliott D. Healy	04/10/2021 05:47	Betina Topolski	2233900
EPA 200.8 Rev. 5.4	03/26/2021	03/29/2021 15:05	Elliott D. Healy	03/31/2021 16:28	Alexander Thompson	2233900
	03/26/2021	03/29/2021 15:05	Elliott D. Healy	03/31/2021 18:32	Alexander Thompson	2233900
EPA 300.0 Rev. 2.1	03/26/2021			04/07/2021 18:39	Lipi Saha	2233864
EPA 350.1 Rev. 2.0	03/26/2021			04/03/2021 10:54	Ping Hua	2233865
EPA 351.2 Rev. 2.0	03/26/2021	04/02/2021 16:46	Benjamin T. Nordmann	04/05/2021 17:42	Virginia P. Brown	2233865
EPA 353.2 Rev. 2.0	03/26/2021			03/29/2021 10:40	Beverly Y. Sanders	2233865
EPA 365.1 Rev. 2.0	03/26/2021	04/02/2021 13:22	Yen Ta	04/05/2021 13:59	Shengyu Ding	2233865
EPA 365.1 Rev. 2.0 dissolved	03/26/2021			03/26/2021 14:24	Lipi Saha	2233866
SM 2320 B-2011	03/26/2021			03/29/2021 22:53	Dale L. Simmons	2233864
SM 2540 D-2011	03/26/2021			03/30/2021 14:36	Yijie Li	2233864
SM 4500 F-C-2011	03/26/2021			03/29/2021 22:11	Dale L. Simmons	2233864
SM 5310 B-2011	03/26/2021			04/01/2021 13:16	Madeline Gruver	2233865