

Chemical Analysis Report

NW-DIST-2020-08-05-02

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

Event Description: **Alaqua Continuous Monitoring**
Request ID: **RQ-2020-08-03-51**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 26-AUG-2020 16:52



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 group are included in this report: 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: Alaqua Creek below Portland Park

Collection Date/Time: 08/04/2020 11:30

Field ID: G3NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2188608	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P385689	
	EPA 300.0 Rev. 2.1	Bromide	2.0		mg Br/L	P386266	
	SM 2320 B-2011	Total Alkalinity	6.0		mg CaCO3/L	P385770	
	SM 2540 D-2011	TSS	2	IA	mg/L	P386006	
	SM 4500 F-C-2011	Fluoride	0.051	I	mg F/L	P385773	
2188610	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P385802	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P385879	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.018		mg N/L	P385720	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P385824	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P385775	
2188612	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385695	

Ref. Method and Comment:

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

Sample Location: Alaqua Bayou

Collection Date/Time: 08/04/2020 12:00

Field ID: G3NW0209

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2188609	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P385689	
	EPA 300.0 Rev. 2.1	Bromide	17		mg Br/L	P386266	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P385771	
	SM 2540 D-2011	TSS	5	I	mg/L	P386007	
	SM 4500 F-C-2011	Fluoride	0.34		mg F/L	P385838	
2188611	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P385801	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P385877	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385977	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P385781	
	SM 5310 B-2011	Organic Carbon	5.9		mg C/L	P385777	
2188613	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385694	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385689

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386266

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385801

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385802

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385879

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385977

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385781

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385824

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385694

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385695

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

Reference Method: SM 2320 B-2011
Batch ID: P385770

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

Reference Method: SM 2320 B-2011
Batch ID: P385771

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

Reference Method: SM 2540 D-2011
Batch ID: P386006

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P386007

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385773

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

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: P385775

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

Reference Method: SM 5310 B-2011
Batch ID: P385777

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386266

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385802

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: P385877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385879

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: P385720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385977

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385781

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: P385824

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385694

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385695

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

Reference Method: SM 2320 B-2011
Batch ID: P385770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P385771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P385777

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187687	Bromide	97.4	94.6	P/P	90 - 110
2188922	Bromide	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188507	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385802

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188546	Ammonia-N	96.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188652	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188772	Kjeldahl Nitrogen	103	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188590	NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189737	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385781

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188437	Total-P	99.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188589	Total-P	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188508	O-Phosphate-P	99.5	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188550	O-Phosphate-P	98.1	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P385773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188548	Fluoride	102	101	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188758	Fluoride	100	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188398	Organic Carbon	98.9	101	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P385777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2188647	Organic Carbon	100	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188415	Turbidity	7.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187687	Bromide	2.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188507	Ammonia-N	0.544	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188546	Ammonia-N	1.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188652	Kjeldahl Nitrogen	0.438	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188772	Kjeldahl Nitrogen	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188590	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189737	NO2NO3-N	1.10	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188437	Total-P	1.86	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188589	Total-P	0.0337	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188508	O-Phosphate-P	0.0868	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188550	O-Phosphate-P	0.204	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188548	Total Alkalinity	2.08	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P385771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188430	Total Alkalinity	0.500	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P385773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188548	Fluoride	0.902	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P385838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188758	Fluoride	0.464	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P385775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188398	Organic Carbon	1.90	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P385777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2188647	Organic Carbon	1.30	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: A100297

Included Lab Sample IDs: 2188608, 2188609

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100298

Included Lab Sample IDs: 2188612, 2188613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.0	P/P	90 - 110
O-Phosphate-P	99.0	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100311

Included Lab Sample IDs: 2188610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100341

Included Lab Sample IDs: 2188608, 2188609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.2	P/P	90 - 110
Total Alkalinity	99.5	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100341

Included Lab Sample IDs: 2188608

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

Reference Method: SM 5310 B-2011

Run ID: A100342

Included Lab Sample IDs: 2188610, 2188611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	103	P/P	90 - 110
Organic Carbon	99.5	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100352

Included Lab Sample IDs: 2188610, 2188611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	98.3	P/P	90 - 110
Ammonia-N	98.3	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A100371

Included Lab Sample IDs: 2188609

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100380

Included Lab Sample IDs: 2188611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.8	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100400

Included Lab Sample IDs: 2188610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100416

Included Lab Sample IDs: 2188610, 2188611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.6	101	P/P	90 - 110
Kjeldahl Nitrogen	97.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100433

Included Lab Sample IDs: 2188611

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100541

Included Lab Sample IDs: 2188608, 2188609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	101	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					7.38	
EPA 300.0 Rev. 2.1	Bromide	103	97.4	94.6	96.7		2.43
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	102	102			0.544
	Ammonia-N	97.6	96.8	98.0			1.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	102			0.438
	Kjeldahl Nitrogen	102	103	99.9			1.52
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	97.0	97.0			0.0
	NO2NO3-N	102	100	102			1.10
EPA 365.1 Rev. 2.0	Total-P	103	99.4	96.9			1.86
	Total-P	99.9	102	102			0.0337
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.5	99.6			0.0868
	O-Phosphate-P	101	98.1	97.9			0.204
SM 2320 B-2011	Total Alkalinity	103				2.08	
	Total Alkalinity	99.1				0.500	
SM 4500 F-C-2011	Fluoride	102	102	101			0.902
	Fluoride	98.4	100	101			0.464
SM 5310 B-2011	Organic Carbon	98.6	98.9	101			1.90
	Organic Carbon	101	100	102			1.30

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2188608, 2188609
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2188608, 2188609
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2188610, 2188611
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2188610, 2188611
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2188610, 2188611
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2188610, 2188611
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2188612, 2188613
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2188608, 2188609
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2188608, 2188609
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2188608, 2188609
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2188610, 2188611

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	08/05/2020			08/05/2020 15:58	Blanca Fach	2188608, 2188609
EPA 300.0 Rev. 2.1	08/05/2020			08/15/2020 15:14	Julia Storbeck	2188608
	08/05/2020			08/15/2020 15:31	Julia Storbeck	2188609
EPA 350.1 Rev. 2.0	08/05/2020			08/08/2020 13:38	Ping Hua	2188611
	08/05/2020			08/08/2020 14:04	Ping Hua	2188610
EPA 351.2 Rev. 2.0	08/05/2020	08/11/2020 09:50	Sima Feizi	08/12/2020 12:15	Jhamieka S. Greenwood	2188611
	08/05/2020	08/11/2020 09:50	Sima Feizi	08/12/2020 13:07	Jhamieka S. Greenwood	2188610
EPA 353.2 Rev. 2.0	08/05/2020			08/06/2020 10:50	Beverly Y. Sanders	2188610
	08/05/2020			08/13/2020 08:39	Beverly Y. Sanders	2188611
EPA 365.1 Rev. 2.0	08/05/2020	08/07/2020 13:00	Shengyu Wang	08/11/2020 09:30	Lipi Saha	2188611
	08/05/2020	08/10/2020 11:00	Shengyu Wang	08/12/2020 07:59	Lipi Saha	2188610
EPA 365.1 Rev. 2.0 dissolved	08/05/2020			08/05/2020 15:36	Virginia P. Brown	2188613
	08/05/2020			08/05/2020 15:52	Virginia P. Brown	2188612
SM 2320 B-2011	08/05/2020			08/06/2020 20:05	Dale L. Simmons	2188608
	08/05/2020			08/07/2020 01:20	Dale L. Simmons	2188609
SM 2540 D-2011	08/05/2020			08/10/2020 13:50	Yijie Li	2188608, 2188609
SM 4500 F-C-2011	08/05/2020			08/06/2020 20:05	Dale L. Simmons	2188608
	08/05/2020			08/07/2020 23:20	Dale L. Simmons	2188609
SM 5310 B-2011	08/05/2020			08/06/2020 23:59	David Boose	2188610
	08/05/2020			08/07/2020 05:18	David Boose	2188611