

Chemical Analysis Report

SW-DIST-2019-11-22-01

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

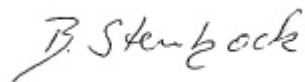
Event Description: **Bear Creek HA**
Request ID: **RQ-2019-11-18-22**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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: 10-DEC-2019 18:21



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: Bear Creek @ Beacon

Collection Date/Time: 11/21/2019 10:45

Field ID: G5SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2138786	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P374748	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P375348	
		Sulfate	38		mg SO4/L	P375352	
	SM 2120 B	Color (true)	11		PCU	P374694	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P374989	
	SM 2540 C-97	TDS	488		mg/L	P375145	
	SM 2540 D-97	TSS	2	I	mg/L	P375129	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P374994	
2138788	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P375090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P375061	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.70		mg N/L	P374759	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P375201	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P375003	
2138790	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P374714	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Baker Creek @ Thonotosassa Rd

Collection Date/Time: 11/21/2019 10:50

Field ID: G2SW0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2138787	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P374749	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P375348	
		Sulfate	12		mg SO4/L	P375352	
	SM 2120 B	Color (true)	130		PCU	P374694	
	SM 2320 B-97	Total Alkalinity	72		mg CaCO3/L	P374990	
	SM 2540 C-97	TDS	160	A	mg/L	P375146	
	SM 2540 D-97	TSS	3	IA	mg/L	P375130	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P374995	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P375095	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P375061	
2138789	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P374759	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P375201	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P374919	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.32		mg P/L	P374714	
	dissolved						

Ref. Method and Comment:

SM 2540 D-97: 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: P374748

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374749

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375348

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375352

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375090

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375095

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375061

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374759

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375201

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 dissolved
Batch ID: P374714

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

Reference Method: SM 2120 B
Batch ID: P374694

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374989

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

Reference Method: SM 2320 B-97
Batch ID: P374990

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

Reference Method: SM 2540 C-97
Batch ID: P375145

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P375146

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375129

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375130

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374994

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P374995

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374919

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

Reference Method: SM 5310 B-00
Batch ID: P375003

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: P375348

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375352

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375090

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375095

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375061

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374759

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375201

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374714

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

Reference Method: SM 2120 B
Batch ID: P374694

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P374989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P374990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P374995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138562	Chloride	102		P	90 - 110
2138799	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138562	Sulfate	102		P	90 - 110
2138799	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138549	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375095

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138802	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138788	Kjeldahl Nitrogen	94.7	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138701	NO2NO3-N	96.2	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138708	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138704	O-Phosphate-P	95.7	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P374994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138154	Fluoride	97.9	96.6	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P374995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139054	Fluoride	97.0	97.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2138789	Organic Carbon	98.5	96.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P375003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139056	Organic Carbon	102	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138995	Turbidity	11.1	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139000	Turbidity	1.83	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138799	Chloride	0.843	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138799	Sulfate	0.678	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138549	Ammonia-N	0.194	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138802	Ammonia-N	0.666	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138788	Kjeldahl Nitrogen	7.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138701	NO2NO3-N	1.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138708	Total-P	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138704	O-Phosphate-P	0.890	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P374694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138799	Color (true)	2.40	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138154	Total Alkalinity	0.125	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P374990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139054	Total Alkalinity	1.15	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P375145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138546	TDS	2.02	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P375146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138787	TDS	5.61	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P374994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138154	Fluoride	0.960	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P374995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139054	Fluoride	0.484	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2138789	Organic Carbon	1.49	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P375003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2139056	Organic Carbon	1.65	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A95913

Included Lab Sample IDs: 2138786, 2138787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	99.2	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95916

Included Lab Sample IDs: 2138790, 2138791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	93.1	93.3	P/P	90 - 110
O-Phosphate-P	93.3	94.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95930

Included Lab Sample IDs: 2138786, 2138787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	102	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95937

Included Lab Sample IDs: 2138788, 2138789

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

Reference Method: SM 5310 B-00

Run ID: A95980

Included Lab Sample IDs: 2138789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.9	97.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A96025

Included Lab Sample IDs: 2138786, 2138787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A96025

Included Lab Sample IDs: 2138786, 2138787

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A96029
Included Lab Sample IDs: 2138788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A96062
Included Lab Sample IDs: 2138788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A96065
Included Lab Sample IDs: 2138789

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A96087
Included Lab Sample IDs: 2138786, 2138787

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A96101
Included Lab Sample IDs: 2138788, 2138789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A96134
Included Lab Sample IDs: 2138789

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A96160
Included Lab Sample IDs: 2138788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	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					11.1	
	Turbidity					1.83	
EPA 300.0 Rev. 2.1	Chloride	102	101	102		0.843	
	Sulfate	101	99.1	102		0.678	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	103	103			0.194
	Ammonia-N	95.8	101	102			0.666
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.8	94.7	104			7.33
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.2	94.7			1.45
EPA 365.1 Rev. 2.0	Total-P	106	106	104			1.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	95.7	96.6			0.890
SM 2120 B	Color (true)	98.8				2.40	
SM 2320 B-97	Total Alkalinity	103				0.125	
	Total Alkalinity	104				1.15	
SM 2540 C-97	TDS					2.02	
	TDS					5.61	
SM 4500 F-C-97	Fluoride	97.2	97.9	96.6			0.960
	Fluoride	98.2	97.0	97.5			0.484
SM 5310 B-00	Organic Carbon	96.6	98.5	96.1			1.49
	Organic Carbon	105	102	100			1.65

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2138786, 2138787
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2138786, 2138787
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2138786, 2138787
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2138788, 2138789
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2138788, 2138789
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2138788, 2138789
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2138788, 2138789
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2138790, 2138791
SM 2120 B / E31780	True Color measured at 450 nm	2138786, 2138787
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2138786, 2138787
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2138786, 2138787
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2138786, 2138787
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2138786, 2138787
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2138788, 2138789

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	11/22/2019			11/22/2019 16:25	Yen Ta	2138786, 2138787
EPA 300.0 Rev. 2.1	11/22/2019			12/05/2019 05:29	Lipi Saha	2138786
	11/22/2019			12/05/2019 05:41	Lipi Saha	2138787
EPA 350.1 Rev. 2.0	11/22/2019			11/27/2019 12:18	Ping Hua	2138788
	11/22/2019			12/02/2019 12:16	Ping Hua	2138789
EPA 351.2 Rev. 2.0	11/22/2019	12/02/2019 12:24	Sima Feizi	12/03/2019 18:59	Jhamieka S. Greenwood	2138788
	11/22/2019	12/02/2019 12:24	Sima Feizi	12/03/2019 19:09	Jhamieka S. Greenwood	2138789
EPA 353.2 Rev. 2.0	11/22/2019			11/25/2019 11:32	Beverly Y. Sanders	2138788
	11/22/2019			11/25/2019 11:33	Beverly Y. Sanders	2138789
EPA 365.1 Rev. 2.0	11/22/2019	12/04/2019 12:29	Yen Ta	12/05/2019 16:07	Benjamin T. Nordmann	2138789
	11/22/2019	12/04/2019 12:29	Yen Ta	12/06/2019 14:12	Benjamin T. Nordmann	2138788
EPA 365.1 Rev. 2.0 dissolved	11/22/2019			11/22/2019 16:44	Samantha Davila	2138791
	11/22/2019			11/22/2019 16:54	Samantha Davila	2138790
SM 2120 B	11/22/2019			11/22/2019 16:07	Julia Storbeck	2138786
	11/22/2019			11/22/2019 16:08	Julia Storbeck	2138787
SM 2320 B-97	11/22/2019			11/27/2019 15:02	Dale L. Simmons	2138786
	11/22/2019			11/27/2019 17:27	Dale L. Simmons	2138787
SM 2540 C-97	11/22/2019			11/25/2019 15:56	Yijie Li	2138786, 2138787
SM 2540 D-97	11/22/2019			11/25/2019 15:56	Yijie Li	2138786, 2138787
SM 4500 F-C-97	11/22/2019			11/27/2019 15:02	Dale L. Simmons	2138786
	11/22/2019			11/27/2019 17:27	Dale L. Simmons	2138787
SM 5310 B-00	11/22/2019			11/26/2019 02:30	Lauren Lees	2138789
	11/22/2019			11/27/2019 04:24	Lauren Lees	2138788