

Chemical Analysis Report

SO-DIST-2019-09-06-01

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

Event Description: **OKEE Canals**
Request ID: **RQ-2019-09-02-10**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-SEP-2019 15:49

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Harney Pond Canal@SR 70

Collection Date/Time: 09/05/2019 10:20

Field ID: G4SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116893	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P370294	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P370544	
		Sulfate	75		mg SO4/L	P370546	
	SM 2120 B	Color (true)	520		PCU	P370308	
	SM 2320 B-97	Total Alkalinity	51	A	mg CaCO3/L	P370400	
	SM 2540 C-97	TDS	311		mg/L	P370733	
	SM 2540 D-97	TSS	8	I	mg/L	P370619	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P370404	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.77		mg N/L	P370670	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.6		mg N/L	P370368	
2116896	EPA 353.2 Rev. 2.0	NO2NO3-N	0.090		mg N/L	P370318	
	EPA 365.1 Rev. 2.0	Total-P	0.47		mg P/L	P370490	
	SM 5310 B-00	Organic Carbon	55		mg C/L	P370527	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.37		mg P/L	P370297	
	dissolved						

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: Prairie Canal@ SR 70

Collection Date/Time: 09/05/2019 10:40

Field ID: G4SD0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116894	EPA 180.1 Rev. 2.0	Turbidity	18	A	NTU	P370294	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P370544	
		Sulfate	8.2		mg SO4/L	P370546	
	SM 2120 B	Color (true)	820	A	PCU	P370310	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P370400	
	SM 2540 C-97	TDS	241		mg/L	P370733	
	SM 2540 D-97	TSS	12		mg/L	P370619	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P370404	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.35		mg N/L	P370670	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.9		mg N/L	P370368	
2116897	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370318	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P370490	
	SM 5310 B-00	Organic Carbon	66		mg C/L	P370527	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.19		mg P/L	P370297	
	dissolved						
2116900	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.19		mg P/L	P370297	

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: C-41 A @ SR 70

Collection Date/Time: 09/05/2019 11:00

Field ID: G4SD0175

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116895	EPA 180.1 Rev. 2.0	Turbidity	8.5		NTU	P370294	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P370544	
		Sulfate	23		mg SO4/L	P370546	
	SM 2120 B	Color (true)	180		PCU	P370309	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P370400	
	SM 2540 C-97	TDS	128		mg/L	P370733	
	SM 2540 D-97	TSS	14	I	mg/L	P370619	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P370404	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P370671	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P370368	
2116898	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P370319	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P370490	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P370527	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P370297	
	dissolved						
2116901	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P370297	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370294

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370544

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370546

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370670

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370368

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370318

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370319

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370490

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: P370297

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

Reference Method: SM 2120 B
Batch ID: P370308

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P370309

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P370310

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P370400

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

Reference Method: SM 2540 C-97
Batch ID: P370733

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370619

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P370404

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P370527

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: P370544

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370546

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370671

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: P370368

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370318

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370319

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370490

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370297

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P370308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P370309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P370310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P370400

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

Reference Method: SM 4500 F-C-97
Batch ID: P370404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116619	Chloride	99.9		P	90 - 110
2116853	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116619	Sulfate	99.9		P	90 - 110
2116853	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116888	Ammonia-N	96.9	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116898	Ammonia-N	95.3	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116830	Kjeldahl Nitrogen	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116830	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116898	NO2NO3-N	96.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116854	Total-P	95.9	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116969	O-Phosphate-P	97.7	98.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P370404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116893	Fluoride	97.7	98.3	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116909	Organic Carbon	104	106	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116894	Turbidity	2.20	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116619	Chloride	0.517	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116619	Sulfate	0.166	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116888	Ammonia-N	0.271	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116898	Ammonia-N	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116830	Kjeldahl Nitrogen	0.500	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116830	NO2NO3-N	0.830	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116898	NO2NO3-N	0.519	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116854	Total-P	0.729	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116969	O-Phosphate-P	0.815	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P370308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116826	Color (true)	2.09	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P370309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116934	Color (true)	3.49	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P370310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116894	Color (true)	0.403	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P370400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116893	Total Alkalinity	0.954	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P370733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116908	TDS	5.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P370404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116893	Fluoride	0.470	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P370527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116909	Organic Carbon	1.27	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94042

Included Lab Sample IDs: 2116893, 2116894, 2116895

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: A94044

Included Lab Sample IDs: 2116899, 2116900, 2116901

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94055

Included Lab Sample IDs: 2116893, 2116894, 2116895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	100	P/P	90 - 115
Color (true)	104	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94057

Included Lab Sample IDs: 2116896, 2116897, 2116898

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

Reference Method: SM 2320 B-97

Run ID: A94093

Included Lab Sample IDs: 2116893, 2116894, 2116895

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

Reference Method: SM 4500 F-C-97

Run ID: A94093

Included Lab Sample IDs: 2116893, 2116894, 2116895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94122

Included Lab Sample IDs: 2116896, 2116897, 2116898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.8	96.1	P/P	90 - 110
Kjeldahl Nitrogen	99.9	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A94151

Included Lab Sample IDs: 2116896, 2116897, 2116898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	107	110	P/P	90 - 110
Organic Carbon	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94158

Included Lab Sample IDs: 2116896, 2116897, 2116898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.7	P/P	90 - 110
Total-P	98.7	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94159

Included Lab Sample IDs: 2116893, 2116894, 2116895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94214

Included Lab Sample IDs: 2116896, 2116897, 2116898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.4	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					2.20	
EPA 300.0 Rev. 2.1	Chloride	98.8	99.9	101		0.517	
	Sulfate	99.5	99.9	101		0.166	
EPA 350.1 Rev. 2.0	Ammonia-N	97.9	96.9	97.1			0.271
	Ammonia-N	95.8	95.3	97.0			1.47
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.9	100	101			0.500
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.0	100			0.830
	NO ₂ NO ₃ -N	99.5	96.0	96.5			0.519
EPA 365.1 Rev. 2.0	Total-P	97.8	95.9	96.6			0.729
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.7	98.5			0.815
SM 2120 B	Color (true)	100				2.09	
	Color (true)	101				3.49	
	Color (true)	103				0.403	
SM 2320 B-97	Total Alkalinity	103				0.954	
SM 2540 C-97	TDS					5.45	
SM 4500 F-C-97	Fluoride	98.4	97.7	98.3			0.470
SM 5310 B-00	Organic Carbon	107	104	106			1.27

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2116893, 2116894, 2116895
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2116893, 2116894, 2116895
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2116893, 2116894, 2116895
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2116896, 2116897, 2116898
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2116896, 2116897, 2116898
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2116896, 2116897, 2116898
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2116896, 2116897, 2116898
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2116899, 2116900, 2116901
SM 2120 B / E31780	True Color measured at 450 nm	2116893, 2116894, 2116895
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2116893, 2116894, 2116895
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2116893, 2116894, 2116895
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2116893, 2116894, 2116895
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2116893, 2116894, 2116895
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2116896, 2116897, 2116898

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	09/06/2019			09/06/2019 16:35	Samantha Davila	2116893, 2116894, 2116895
EPA 300.0 Rev. 2.1	09/06/2019			09/11/2019 19:36	Jhamieka S. Greenwood	2116893
	09/06/2019			09/11/2019 19:48	Jhamieka S. Greenwood	2116894
	09/06/2019			09/11/2019 20:24	Jhamieka S. Greenwood	2116895
EPA 350.1 Rev. 2.0	09/06/2019			09/13/2019 11:43	Ping Hua	2116896
	09/06/2019			09/13/2019 11:45	Ping Hua	2116897
	09/06/2019			09/13/2019 11:51	Ping Hua	2116898
EPA 351.2 Rev. 2.0	09/06/2019	09/09/2019 13:25	Sima Feizi	09/10/2019 16:20	Julia Storbeck	2116896
	09/06/2019	09/09/2019 13:25	Sima Feizi	09/10/2019 16:23	Julia Storbeck	2116898
	09/06/2019	09/09/2019 13:25	Sima Feizi	09/10/2019 16:58	Julia Storbeck	2116897
EPA 353.2 Rev. 2.0	09/06/2019			09/09/2019 09:00	Beverly Y. Sanders	2116896
	09/06/2019			09/09/2019 09:01	Beverly Y. Sanders	2116897
	09/06/2019			09/09/2019 09:08	Beverly Y. Sanders	2116898
EPA 365.1 Rev. 2.0	09/06/2019	09/11/2019 10:25	Lipi Saha	09/12/2019 09:29	Rosalyn Ballman	2116896
	09/06/2019	09/11/2019 10:25	Lipi Saha	09/12/2019 09:30	Rosalyn Ballman	2116897
	09/06/2019	09/11/2019 10:25	Lipi Saha	09/12/2019 09:33	Rosalyn Ballman	2116898
EPA 365.1 Rev. 2.0 dissolved	09/06/2019			09/06/2019 16:29	Jhamieka S. Greenwood	2116901
	09/06/2019			09/06/2019 16:34	Jhamieka S. Greenwood	2116899, 2116900
SM 2120 B	09/06/2019			09/06/2019 17:28	Madeline Funaro	2116893
	09/06/2019			09/06/2019 17:52	Madeline Funaro	2116895
	09/06/2019			09/06/2019 17:56	Madeline Funaro	2116894
SM 2320 B-97	09/06/2019			09/09/2019 23:36	Dale L. Simmons	2116893
	09/06/2019			09/09/2019 23:58	Dale L. Simmons	2116894
	09/06/2019			09/10/2019 00:10	Dale L. Simmons	2116895
SM 2540 C-97	09/06/2019			09/10/2019 14:32	Yijie Li	2116893, 2116894, 2116895
SM 2540 D-97	09/06/2019			09/10/2019 14:32	Yijie Li	2116893, 2116894, 2116895
SM 4500 F-C-97	09/06/2019			09/09/2019 23:26	Dale L. Simmons	2116893
	09/06/2019			09/09/2019 23:58	Dale L. Simmons	2116894
	09/06/2019			09/10/2019 00:10	Dale L. Simmons	2116895
SM 5310 B-00	09/06/2019			09/11/2019 16:39	Madeline Funaro	2116896
	09/06/2019			09/11/2019 17:18	Madeline Funaro	2116897
	09/06/2019			09/11/2019 17:30	Madeline Funaro	2116898