

Chemical Analysis Report

SO-DIST-2018-04-03-01

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2018-04-02-20**
Customer: **SO-DIST**
Project ID: **BMAP**

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-APR-2018 11:44



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 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: Orange River

Collection Date/Time: 04/02/2018 08:40

Field ID: G3SD0128

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979697	SM 2120 B	Color (true)	45		PCU	P342635	
	SM 2320 B-97	Total Alkalinity	172		mg CaCO3/L	P343027	RPD
	SM 2540 D-97	TSS	4	I	mg/L	P342963	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P343816	
1979700	SM 5310 B-00 dissolved	Organic Carbon	12		mg C/L	P342999	
1979703	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P343146	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P342701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P342751	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P342914	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P342999	
1979706	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P342702	

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: Hancock Creek

Collection Date/Time: 04/02/2018 09:25

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979698	SM 2120 B	Color (true)	57		PCU	P342635	
	SM 2320 B-97	Total Alkalinity	128	A	mg CaCO3/L	P343500	
	SM 2540 D-97	TSS	6	I	mg/L	P342965	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P343506	
1979701	SM 5310 B-00 dissolved	Organic Carbon	12		mg C/L	P343001	
1979704	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P343146	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P342701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P342751	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P342914	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P343001	
1979707	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P342702	

Sample Location: Telegraph Creek

Collection Date/Time: 04/02/2018 10:10

Field ID: G3SD0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979699	SM 2120 B	Color (true)	57		PCU	P342636	
	SM 2320 B-97	Total Alkalinity	203		mg CaCO3/L	P343027	RPD
	SM 2540 D-97	TSS	6	I	mg/L	P342963	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P343816	
1979702	SM 5310 B-00 dissolved	Organic Carbon	14		mg C/L	P342999	
1979705	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P343146	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P342701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P342751	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P342914	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P342999	

Field ID: G3SD0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979708	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P342702	

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 350.1 Rev. 2.0
Batch ID: P343146

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342701

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342751

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342914

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342702

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

Reference Method: SM 2120 B
Batch ID: P342635

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P342636

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343027

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P343500

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

Reference Method: SM 2540 D-97
Batch ID: P342963

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342965

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343506

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P342999

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

Reference Method: SM 5310 B-00
Batch ID: P343001

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P342999

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P343001

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343146

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342751

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342914

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342702

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

Reference Method: SM 2320 B-97
Batch ID: P343027

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P343500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P343506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.1		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	91 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P342999

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

Reference Method: SM 5310 B-00
Batch ID: P343001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P342999

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

Reference Method: SM 5310 B-00 dissolved
Batch ID: P343001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979443	Ammonia-N	97.5	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978935	Kjeldahl Nitrogen	99.5	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979078	NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979991	Total-P	96.6	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979706	O-Phosphate-P	96.4	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P343506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979698	Fluoride	93.2	94.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983728	Fluoride	96.1	96.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P342999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979670	Organic Carbon	96.8	96.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P343001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979078	Organic Carbon	92.1	92.0	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P342999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979670	Organic Carbon	96.8	96.1	P/P	85 - 115

Reference Method: SM 5310 B-00 dissolved
Batch ID: P343001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979078	Organic Carbon	92.1	92.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979443	Ammonia-N	0.769	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978935	Kjeldahl Nitrogen	3.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979078	NO2NO3-N	0.844	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979991	Total-P	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979706	O-Phosphate-P	0.661	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P342635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979667	Color (true)	0.430	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P342636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979744	Color (true)	7.53	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P343027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979516	Total Alkalinity	4.27	Sample	F	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P343500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979698	Total Alkalinity	0.0803	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P342965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979744	TSS	5.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979698	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P343816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983728	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P342999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979670	Organic Carbon	0.600	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P343001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979078	Organic Carbon	0.0906	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P342999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979670	Organic Carbon	0.600	Spike	P	0 - 20

Reference Method: SM 5310 B-00 dissolved
Batch ID: P343001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979078	Organic Carbon	0.0906	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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A83009

Included Lab Sample IDs: 1979697, 1979698, 1979699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	85 - 115
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A83021

Included Lab Sample IDs: 1979706, 1979707, 1979708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.5	P/P	90 - 110
O-Phosphate-P	99.5	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83035

Included Lab Sample IDs: 1979703, 1979704, 1979705

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83048

Included Lab Sample IDs: 1979703, 1979704, 1979705

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

Reference Method: SM 5310 B-00

Run ID: A83104

Included Lab Sample IDs: 1979703, 1979704, 1979705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.0	93.6	P/P	90 - 110
Organic Carbon	94.7	96.2	P/P	90 - 110

Reference Method: SM 5310 B-00 dissolved

Run ID: A83104

Included Lab Sample IDs: 1979700, 1979701, 1979702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.0	93.6	P/P	90 - 110
Organic Carbon	94.7	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83107

Included Lab Sample IDs: 1979704, 1979705

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83113

Included Lab Sample IDs: 1979703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83116

Included Lab Sample IDs: 1979697, 1979699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83153

Included Lab Sample IDs: 1979703, 1979704, 1979705

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

Reference Method: SM 2320 B-97

Run ID: A83264

Included Lab Sample IDs: 1979698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83264

Included Lab Sample IDs: 1979698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83371

Included Lab Sample IDs: 1979697, 1979699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	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 SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	97.5	98.8		0.769
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	99.5	103		3.34
EPA 353.2 Rev. 2.0	NO2NO3-N	103	107	108		0.844
EPA 365.1 Rev. 2.0	Total-P	102	96.6	97.9		1.14

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 365.1 Rev. 2.0 dissolved SM 2120 B	O-Phosphate-P Color (true) Color (true)	98.3	96.4	97.2		0.430 7.53	0.661
SM 2320 B-97	Total Alkalinity Total Alkalinity	98.6 100				4.27 0.0803	
SM 2540 D-97	TSS					5.71	
SM 4500 F-C-97	Fluoride Fluoride	94.1 94.8	93.2 96.1	94.0 96.9			0.480 0.480
SM 5310 B-00	Organic Carbon Organic Carbon	96.6 96.0	96.8 92.1	96.1 92.0			0.600 0.0906
SM 5310 B-00 dissolved	Organic Carbon Organic Carbon	96.6 96.0	96.8 92.1	96.1 92.0			0.600 0.0906

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1979703, 1979704, 1979705
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1979703, 1979704, 1979705
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1979703, 1979704, 1979705
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1979703, 1979704, 1979705
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1979706, 1979707, 1979708
SM 2120 B / E31780	True Color measured at 450 nm	1979697, 1979698, 1979699
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1979697, 1979698, 1979699
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1979697, 1979698, 1979699
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1979697, 1979698, 1979699
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1979703, 1979704, 1979705
SM 5310 B-00 dissolved / E31780	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	1979700, 1979701, 1979702

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	04/03/2018			04/10/2018 11:03	Ping Hua	1979703
	04/03/2018			04/10/2018 11:04	Ping Hua	1979704
	04/03/2018			04/10/2018 11:06	Ping Hua	1979705
EPA 351.2 Rev. 2.0	04/03/2018	04/04/2018 10:15	Adrian Shelby	04/05/2018 10:35	Joseph Suarez	1979703
	04/03/2018	04/04/2018 10:15	Adrian Shelby	04/05/2018 10:37	Joseph Suarez	1979704
	04/03/2018	04/04/2018 10:15	Adrian Shelby	04/05/2018 10:38	Joseph Suarez	1979705
EPA 353.2 Rev. 2.0	04/03/2018			04/04/2018 12:42	Lauren Bottorf	1979703
	04/03/2018			04/04/2018 12:43	Lauren Bottorf	1979704
	04/03/2018			04/04/2018 12:44	Lauren Bottorf	1979705
EPA 365.1 Rev. 2.0	04/03/2018	04/06/2018 13:01	Sima Feizi	04/09/2018 09:08	Beverly Y. Sanders	1979704
	04/03/2018	04/06/2018 13:01	Sima Feizi	04/09/2018 09:10	Beverly Y. Sanders	1979705
	04/03/2018	04/06/2018 13:01	Sima Feizi	04/09/2018 11:33	Beverly Y. Sanders	1979703
EPA 365.1 Rev. 2.0 dissolved	04/03/2018			04/03/2018 15:23	Megan Treadwell	1979706
	04/03/2018			04/03/2018 15:29	Megan Treadwell	1979707
	04/03/2018			04/03/2018 15:36	Megan Treadwell	1979708
SM 2120 B	04/03/2018			04/03/2018 13:46	Tanya Welborn	1979697
	04/03/2018			04/03/2018 13:47	Tanya Welborn	1979698
	04/03/2018			04/03/2018 13:50	Tanya Welborn	1979699
SM 2320 B-97	04/03/2018			04/07/2018 07:02	Dale L. Simmons	1979697
	04/03/2018			04/07/2018 07:17	Dale L. Simmons	1979699
	04/03/2018			04/15/2018 18:41	Dale L. Simmons	1979698
SM 2540 D-97	04/03/2018			04/04/2018 15:34	Yijie Li	1979697, 1979698, 1979699
SM 4500 F-C-97	04/03/2018			04/15/2018 16:43	Dale L. Simmons	1979698
	04/03/2018			04/20/2018 01:37	Dale L. Simmons	1979697
	04/03/2018			04/20/2018 01:41	Dale L. Simmons	1979699
SM 5310 B-00	04/03/2018			04/06/2018 23:37	Megan Treadwell	1979703
	04/03/2018			04/06/2018 23:53	Megan Treadwell	1979705
	04/03/2018			04/07/2018 14:44	Megan Treadwell	1979704
SM 5310 B-00 dissolved	04/03/2018			04/06/2018 23:08	Megan Treadwell	1979700
	04/03/2018			04/06/2018 23:22	Megan Treadwell	1979702
	04/03/2018			04/07/2018 14:30	Megan Treadwell	1979701