Chemical Analysis Report

NW-DIST-2018-08-08-01

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

Event Description: **Dune Lakes Run**
Request ID: **RQ-2018-08-06-32**
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

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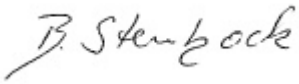
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 23-AUG-2018 13:38



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: MORRIS LAKE **Collection Date/Time: 08/07/2018 10:45**

Field ID: G3NW0126 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015042	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P349815	
	SM 2320 B-97	Total Alkalinity	1.1	I	mg CaCO3/L	P350186	
	SM 2540 D-97	TSS	3	I	mg/L	P350314	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P350109	
2015045	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P350000	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P349990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P349890	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P349972	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P349962	
2015048	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349845	

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: STALLWORTH LAKE (CENTER) **Collection Date/Time: 08/07/2018 11:30**

Field ID: G3NW0083 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015043	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P349815	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P350186	
	SM 2540 D-97	TSS	3	I	mg/L	P350314	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P350109	
2015046	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P350000	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P349990	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P349891	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P349972	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P349962	
2015049	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349845	

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: OYSTER LAKE CENTER **Collection Date/Time: 08/07/2018 12:00**

Field ID: G3NW0165 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2015044	EPA 180.1 Rev. 2.0	Turbidity	12	A	NTU	P349815	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P350186	
	SM 2540 D-97	TSS	9	I	mg/L	P350314	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P350109	
2015047	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P350002	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P349989	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P349981	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P349974	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P349962	
2015050	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P349844	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P349815

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350000

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350002

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349989

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349890

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349891

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349981

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349972

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: P349974

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349844

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349845

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

Reference Method: SM 2320 B-97
Batch ID: P350186

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

Reference Method: SM 2540 D-97
Batch ID: P350314

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350109

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P349962

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: P350000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350002

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349989

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349990

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349890

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349891

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349981

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: P349972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349974

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349844

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349845

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

Reference Method: SM 2320 B-97
Batch ID: P350186

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350109

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015045	Ammonia-N	97.2	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2014910	Kjeldahl Nitrogen	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015046	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2014933	NO2NO3-N	94.6	93.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015788	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015113	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015045	Total-P	92.6	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015113	Total-P	95.4	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2014905	O-Phosphate-P	92.0	92.1	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015048	O-Phosphate-P	94.2	94.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P350109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2014647	Fluoride	98.6	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P349962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015045	Organic Carbon	99.4	99.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P349815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015044	Turbidity	2.58	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015045	Ammonia-N	0.385	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014585	Ammonia-N	0.597	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014910	Kjeldahl Nitrogen	0.446	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P349990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015046	Kjeldahl Nitrogen	0.485	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014933	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015788	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P349981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015113	NO2NO3-N	0.952	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015045	Total-P	0.870	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P349974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015113	Total-P	1.24	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014905	O-Phosphate-P	0.0796	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P349845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015048	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P350186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014647	Total Alkalinity	0.655	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P350109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2014647	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P349962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2015045	Organic Carbon	0.0687	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: A85756
Included Lab Sample IDs: 2015042, 2015043, 2015044

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85769
Included Lab Sample IDs: 2015048, 2015049, 2015050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.7	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85797
Included Lab Sample IDs: 2015045, 2015046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A85825
Included Lab Sample IDs: 2015045, 2015046, 2015047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	97.4	P/P	90 - 110
Organic Carbon	97.2	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85831
Included Lab Sample IDs: 2015047

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85836
Included Lab Sample IDs: 2015045, 2015046, 2015047

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85853
Included Lab Sample IDs: 2015045, 2015046, 2015047

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A85868
Included Lab Sample IDs: 2015042, 2015043, 2015044

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85878
Included Lab Sample IDs: 2015045, 2015046, 2015047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	103	P/P	90 - 110
Kjeldahl Nitrogen	99.3	107	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A85905
Included Lab Sample IDs: 2015042, 2015043, 2015044

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	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		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.58	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	97.2	97.7			0.385
	Ammonia-N	96.9					0.597
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	99.5	100			0.446
	Kjeldahl Nitrogen	103	102	101			0.485
EPA 353.2 Rev. 2.0	NO2NO3-N	102	94.6	93.6			1.00
	NO2NO3-N	102	101	101			0.0
	NO2NO3-N	102	102	103			0.952
EPA 365.1 Rev. 2.0	Total-P	92.2	92.6	93.4			0.870
	Total-P	98.4	95.4	94.2			1.24
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.8	92.0	92.1			0.0796
	O-Phosphate-P	97.2	94.2	94.2			0.0
SM 2320 B-97	Total Alkalinity	103				0.655	
SM 4500 F-C-97	Fluoride	97.9	98.6	99.3			0.473
SM 5310 B-00	Organic Carbon	97.5	99.4	99.3			0.0687

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2015042, 2015043, 2015044
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2015045, 2015046, 2015047
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2015045, 2015046, 2015047
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2015045, 2015046, 2015047
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2015045, 2015046, 2015047
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2015048, 2015049, 2015050
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2015042, 2015043, 2015044
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2015042, 2015043, 2015044
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2015042, 2015043, 2015044
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2015045, 2015046, 2015047

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	08/08/2018			08/08/2018 15:53	William L. Brown IV	2015042, 2015043, 2015044
EPA 350.1 Rev. 2.0	08/08/2018			08/10/2018 14:39	Julia Storbeck	2015045
	08/08/2018			08/10/2018 14:51	Julia Storbeck	2015046
	08/08/2018			08/10/2018 16:01	Julia Storbeck	2015047
EPA 351.2 Rev. 2.0	08/08/2018	08/13/2018 11:00	Adrian Shelby	08/14/2018 13:18	Joseph Suarez	2015047
	08/08/2018	08/13/2018 16:00	Adrian Shelby	08/14/2018 13:43	Joseph Suarez	2015045
	08/08/2018	08/13/2018 16:00	Adrian Shelby	08/14/2018 13:45	Joseph Suarez	2015046
EPA 353.2 Rev. 2.0	08/08/2018			08/10/2018 09:45	Beverly Y. Sanders	2015045
	08/08/2018			08/10/2018 09:59	Beverly Y. Sanders	2015046
	08/08/2018			08/13/2018 11:40	Lauren Bottorf	2015047
EPA 365.1 Rev. 2.0	08/08/2018	08/13/2018 11:40	Sima Feizi	08/14/2018 11:29	Beverly Y. Sanders	2015045
	08/08/2018	08/13/2018 11:40	Sima Feizi	08/14/2018 11:30	Beverly Y. Sanders	2015046
	08/08/2018	08/13/2018 11:40	Sima Feizi	08/14/2018 12:02	Beverly Y. Sanders	2015047
EPA 365.1 Rev. 2.0 dissolved	08/08/2018			08/08/2018 12:48	Megan Treadwell	2015048
	08/08/2018			08/08/2018 12:50	Megan Treadwell	2015049
	08/08/2018			08/08/2018 12:51	Megan Treadwell	2015050
SM 2320 B-97	08/08/2018			08/16/2018 05:36	Dale L. Simmons	2015042
	08/08/2018			08/16/2018 05:44	Dale L. Simmons	2015043
	08/08/2018			08/16/2018 05:53	Dale L. Simmons	2015044
SM 2540 D-97	08/08/2018			08/10/2018 16:03	Yijie Li	2015042, 2015043, 2015044
SM 4500 F-C-97	08/08/2018			08/14/2018 07:41	Dale L. Simmons	2015042
	08/08/2018			08/14/2018 07:51	Dale L. Simmons	2015043
	08/08/2018			08/14/2018 08:01	Dale L. Simmons	2015044
SM 5310 B-00	08/08/2018			08/09/2018 18:39	Julia Storbeck	2015045
	08/08/2018			08/10/2018 00:33	Julia Storbeck	2015046
	08/08/2018			08/10/2018 00:46	Julia Storbeck	2015047