Chemical Analysis Report

NW-DIST-2018-08-23-01

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-2018-08-20-17**
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: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 11-SEP-2018 11:28

NON-CONFORMANCE REPORT INCLUDED

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: Eastern Lake off of Center Avenue **Collection Date/Time: 08/22/2018 11:30**

Field ID: G3NW0124 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019407	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	3	I	mg/L	P351032	
	SM 4500 F-C-97	Fluoride	0.51		mg F/L	P350905	
2019409	EPA 350.1 Rev. 2.0	Ammonia-N	0.012	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P350751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350671	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P350717	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P350837	
2019411	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350698	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: LITTLE REDFISH LAKE **Collection Date/Time: 08/22/2018 12:10**

Field ID: G3NW0125 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019408	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	4	I	mg/L	P351030	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P350905	
2019410	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	IY	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P350751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P351122	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P350717	
	SM 5310 B-00	Organic Carbon	22	Y	mg C/L	P350876	
2019412	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350698	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.
EPA 353.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.
SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Hogtown Bayou at Cessna Park **Collection Date/Time: 08/22/2018 12:55**

Field ID: G3NW0152 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019401	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	60	A	mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	8	IA	mg/L	P351032	
	SM 4500 F-C-97	Fluoride	0.41		mg F/L	P350905	
2019403	EPA 350.1 Rev. 2.0	Ammonia-N	0.012	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P350751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P350671	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P350717	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P350837	
2019405	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350698	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Mack Bayou end of Bayou Rd **Collection Date/Time: 08/22/2018 13:25**

Field ID: G3NW0144 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2019402	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P350783	
	SM 2320 B-97	Total Alkalinity	64		mg CaCO3/L	P350903	
	SM 2540 D-97	TSS	7	I	mg/L	P351032	
	SM 4500 F-C-97	Fluoride	0.47	I	mg F/L	P350905	
2019404	EPA 350.1 Rev. 2.0	Ammonia-N	0.007	Y	mg N/L	P351009	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P350751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P350671	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P350717	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P350837	
2019406	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P350698	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.

Non-Conformance Report

NCR ID: 7193

Event(s)	Job(s)	Sample(s)	Test(s)
NW-DIST-2018-08-23-01	TLH-2018-08-23-25	2019403	W-TOC
NW-DIST-2018-08-23-01	TLH-2018-08-23-25	2019404	W-TOC
NW-DIST-2018-08-23-01	TLH-2018-08-23-25	2019409	W-TOC
NW-DIST-2018-08-23-01	TLH-2018-08-23-25	2019410	W-TOC

NCR Type: CUSTODY **NCR Category: General**

Observation: Sample was not stored in refrigerator the night of 08/27/2018.

Resolution: Sample was returned to refrigerator on the morning of 08/28/2018. Analyses requiring refrigeration that were prepared or, if preparation is not required, analyzed on or after 08/28/2018 will be Y qualified for incorrect preservation.

Authorized by/Date: Peter D. Kaus 9/11/2018

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350783

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350671

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350717

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

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

Reference Method: SM 2320 B-97
Batch ID: P350903

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

Reference Method: SM 2540 D-97
Batch ID: P351030

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P351032

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P350837

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

Reference Method: SM 5310 B-00
Batch ID: P350876

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: P351009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

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: P350671

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: P351122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350717

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

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

Reference Method: SM 2320 B-97
Batch ID: P350903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P350876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019403	Ammonia-N	100	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019404	Kjeldahl Nitrogen	104	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019084	NO2NO3-N	96.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019410	NO2NO3-N	91.5	92.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018712	Total-P	98.1	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019405	O-Phosphate-P	98.2	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019401	Fluoride	96.5	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018533	Organic Carbon	97.3	97.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P350876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019393	Organic Carbon	99.6	99.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019395	Turbidity	8.05	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019403	Ammonia-N	0.973	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019404	Kjeldahl Nitrogen	3.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019084	NO2NO3-N	2.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019410	NO2NO3-N	0.545	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018712	Total-P	0.907	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019405	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P350903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019401	Total Alkalinity	0.264	Sample	P	0 - 1.6

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P350905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019401	Fluoride	0.986	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018533	Organic Carbon	0.459	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P350876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019393	Organic Carbon	0.111	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 353.2 Rev. 2.0
Run ID: A86086
Included Lab Sample IDs: 2019403, 2019404, 2019409

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A86099
Included Lab Sample IDs: 2019405, 2019406, 2019411, 2019412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.1	P/P	90 - 110
O-Phosphate-P	98.9	98.2	P/P	90 - 110
O-Phosphate-P	99.5	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86122
Included Lab Sample IDs: 2019403, 2019404, 2019409, 2019410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.8	P/P	90 - 110
Total-P	99.2	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A86127
Included Lab Sample IDs: 2019401, 2019402, 2019407, 2019408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86149
Included Lab Sample IDs: 2019403, 2019404, 2019409, 2019410

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

Reference Method: SM 5310 B-00
Run ID: A86150
Included Lab Sample IDs: 2019403, 2019404, 2019409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.6	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A86162
Included Lab Sample IDs: 2019410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.1	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A86172
Included Lab Sample IDs: 2019401, 2019402, 2019407, 2019408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A86172
Included Lab Sample IDs: 2019401, 2019402, 2019407, 2019408

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86236
Included Lab Sample IDs: 2019403, 2019404, 2019409, 2019410

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86297
Included Lab Sample IDs: 2019410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	99.5	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					8.05	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7	100	99.0			0.973
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	104	109			3.54
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.0	99.0			2.65
	NO2NO3-N	97.5	91.5	92.0			0.545
EPA 365.1 Rev. 2.0	Total-P	98.6	98.1	97.2			0.907
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	98.2	97.1			1.13
SM 2320 B-97	Total Alkalinity	102				0.264	
SM 4500 F-C-97	Fluoride	97.6	96.5	97.9			0.986
SM 5310 B-00	Organic Carbon	98.4	97.3	97.9			0.459
	Organic Carbon	96.4	99.6	99.4			0.111

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2019401, 2019402, 2019407, 2019408
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2019403, 2019404, 2019409, 2019410
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2019403, 2019404, 2019409, 2019410
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2019403, 2019404, 2019409, 2019410
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2019403, 2019404, 2019409, 2019410
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2019405, 2019406, 2019411, 2019412
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2019401, 2019402, 2019407, 2019408
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2019401, 2019402, 2019407, 2019408
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2019401, 2019402, 2019407, 2019408
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2019403, 2019404, 2019409, 2019410

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	08/23/2018			08/23/2018 17:10	Megan Treadwell	2019401, 2019402, 2019407, 2019408
EPA 350.1 Rev. 2.0	08/23/2018			08/28/2018 12:45	Ping Hua	2019403
	08/23/2018			08/28/2018 12:55	Ping Hua	2019404
	08/23/2018			08/28/2018 12:57	Ping Hua	2019409
	08/23/2018			08/28/2018 12:58	Ping Hua	2019410
EPA 351.2 Rev. 2.0	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 11:55	Joseph Suarez	2019403
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 11:57	Joseph Suarez	2019404
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 12:01	Joseph Suarez	2019409
	08/23/2018	08/27/2018 11:00	Adrian Shelby	08/28/2018 12:03	Joseph Suarez	2019410
EPA 353.2 Rev. 2.0	08/23/2018			08/23/2018 14:49	Lauren Bottorf	2019403
	08/23/2018			08/23/2018 14:50	Lauren Bottorf	2019404
	08/23/2018			08/23/2018 14:52	Lauren Bottorf	2019409
	08/23/2018			09/05/2018 14:31	Lauren Bottorf	2019410
EPA 365.1 Rev. 2.0	08/23/2018	08/24/2018 12:31	Sima Feizi	08/27/2018 12:41	Beverly Y. Sanders	2019403
	08/23/2018	08/24/2018 12:31	Sima Feizi	08/27/2018 12:42	Beverly Y. Sanders	2019404
	08/23/2018	08/24/2018 12:31	Sima Feizi	08/27/2018 12:43	Beverly Y. Sanders	2019409
	08/23/2018	08/24/2018 12:31	Sima Feizi	08/27/2018 12:51	Beverly Y. Sanders	2019410
EPA 365.1 Rev. 2.0 dissolved	08/23/2018			08/23/2018 14:12	Julia Storbeck	2019405
	08/23/2018			08/23/2018 14:25	Julia Storbeck	2019411
	08/23/2018			08/23/2018 14:26	Julia Storbeck	2019412
	08/23/2018			08/23/2018 14:46	Julia Storbeck	2019406
SM 2320 B-97	08/23/2018			08/29/2018 01:15	Dale L. Simmons	2019401
	08/23/2018			08/29/2018 01:25	Dale L. Simmons	2019408
	08/23/2018			08/29/2018 01:36	Dale L. Simmons	2019402
	08/23/2018			08/29/2018 01:56	Dale L. Simmons	2019407
SM 2540 D-97	08/23/2018			08/28/2018 15:02	Yijie Li	2019401, 2019402, 2019407, 2019408
SM 4500 F-C-97	08/23/2018			08/28/2018 23:35	Dale L. Simmons	2019401
	08/23/2018			08/28/2018 23:46	Dale L. Simmons	2019408
	08/23/2018			08/28/2018 23:55	Dale L. Simmons	2019402
	08/23/2018			08/29/2018 00:02	Dale L. Simmons	2019407
SM 5310 B-00	08/23/2018			08/28/2018 08:27	Megan Treadwell	2019403
	08/23/2018			08/28/2018 08:42	Megan Treadwell	2019404
	08/23/2018			08/28/2018 08:55	Megan Treadwell	2019409
	08/23/2018			08/28/2018 20:25	Megan Treadwell	2019410