Chemical Analysis Report

NW-DIST-2019-03-12-01

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

Event Description: **Bayou Chico BMAP/Blank**
Request ID: **RQ-2019-02-11-43**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
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160 Government Center
Suite 308
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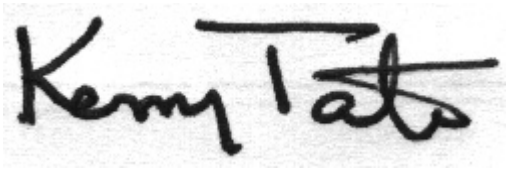
Date Certified: 27-MAR-2019 10:21



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: PENSACOLA BAY AT SANDERS BEACH **Collection Date/Time: 03/11/2019 10:25**

Field ID: 33020J10 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068849	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P360285	
2068850	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P360576	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	I	mg N/L	P360538	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.075		mg N/L	P360659	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P360536	

Sample Location: BAYOU CHICO AT MANDALAY DRIVE **Collection Date/Time: 03/11/2019 10:45**

Field ID: 33020JD4 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068837	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P360285	
2068840	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P360584	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P360467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P360659	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P360535	

Sample Location: JONES CREEK UPSTREAM OF NEW WARRINGTON RD

Collection Date/Time: 03/11/2019 11:35

Field ID: 33020117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068843	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P360285	
2068846	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P360586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P360466	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P360495	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P360529	

Sample Location: JACKSON CREEK @ OLD CORRY ROAD **Collection Date/Time: 03/11/2019 11:55**

Field ID: 33020221 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068844	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P360285	
2068847	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P360586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P360466	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P360495	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P360529	

Sample Location: JACKSON CREEK AT NEW WARRINGTON ROAD

Collection Date/Time: 03/11/2019 12:10

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068845	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P360285	
2068848	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P360586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P360466	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P360495	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P360529	

Sample Location: BAYOU CHICO AT NAVY BLVD. **Collection Date/Time: 03/11/2019 12:30**

Field ID: 3302JE20 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068838	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P360285	
2068841	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P360584	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P360538	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P360659	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P360535	

Sample Location: BAYOU CHICO AT W ST. BRIDGE **Collection Date/Time: 03/11/2019 12:45**

Field ID: 33020JF1 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068839	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P360285	
2068842	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P360425	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P360466	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P360692	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P360526	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360285

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360425

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360576

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360584

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360467

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360538

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360659

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360692

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360526

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360535

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360536

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360576

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360584

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360538

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

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: P360659

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360692

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360526

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360535

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360536

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068731	Ammonia-N	99.3	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068850	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068806	Ammonia-N	99.1	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068846	Ammonia-N	98.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068842	Kjeldahl Nitrogen	93.2	91.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068806	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068850	Kjeldahl Nitrogen	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068698	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068850	NO2NO3-N	98.1	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069085	NO2NO3-N	95.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068732	Total-P	99.8	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068847	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068806	Total-P	96.6	91.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068850	Total-P	102	103	P/P	90 - 110

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068819	Turbidity	3.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068731	Ammonia-N	0.209	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068850	Ammonia-N	1.08	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068806	Ammonia-N	3.30	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068846	Ammonia-N	0.309	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068842	Kjeldahl Nitrogen	1.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068806	Kjeldahl Nitrogen	0.474	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068850	Kjeldahl Nitrogen	1.62	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068698	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068850	NO2NO3-N	1.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069085	NO2NO3-N	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068732	Total-P	6.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068847	Total-P	0.589	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068806	Total-P	5.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068850	Total-P	1.07	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: A89962
Included Lab Sample IDs: 2068837, 2068838, 2068839, 2068843, 2068844, 2068845, 2068849

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90011
Included Lab Sample IDs: 2068842

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90029
Included Lab Sample IDs: 2068846, 2068847, 2068848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90036
Included Lab Sample IDs: 2068842, 2068846, 2068847, 2068848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	108	P/P	90 - 110
Kjeldahl Nitrogen	108	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90054
Included Lab Sample IDs: 2068850

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90056
Included Lab Sample IDs: 2068840, 2068841, 2068846, 2068847, 2068848

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90069
Included Lab Sample IDs: 2068840

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	108	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90090
Included Lab Sample IDs: 2068841, 2068850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110
Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90095
Included Lab Sample IDs: 2068840, 2068841, 2068850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.5	P/P	90 - 110
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90099
Included Lab Sample IDs: 2068842

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90147
Included Lab Sample IDs: 2068840, 2068841, 2068842, 2068846, 2068847, 2068848

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90159
Included Lab Sample IDs: 2068850

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.12	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	99.3	99.1			0.209
	Ammonia-N	101	102	103			1.08
	Ammonia-N	99.9	99.1	103			3.30
	Ammonia-N	100	98.8	99.3			0.309
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	93.2	91.2			1.81
	Kjeldahl Nitrogen	108	103	103			0.474
	Kjeldahl Nitrogen	101	102	104			1.62
EPA 353.2 Rev. 2.0	NO2NO3-N	100	103	103			0.0
	NO2NO3-N	100	98.1	101			1.83
	NO2NO3-N	98.0	95.5	97.5			1.15
EPA 365.1 Rev. 2.0	Total-P	97.8	99.8	107			6.45
	Total-P	100	101	102			0.589
	Total-P	101	96.6	91.4			5.48
	Total-P	100	102	103			1.07

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2068837, 2068838, 2068839, 2068843, 2068844, 2068845, 2068849
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2068840, 2068841, 2068842, 2068846, 2068847, 2068848, 2068850
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2068840, 2068841, 2068842, 2068846, 2068847, 2068848, 2068850
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2068840, 2068841, 2068842, 2068846, 2068847, 2068848, 2068850
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2068840, 2068841, 2068842, 2068846, 2068847, 2068848, 2068850

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	03/12/2019			03/12/2019 16:50	Adrian Shelby	2068837, 2068838, 2068839, 2068843, 2068844, 2068845, 2068849
EPA 350.1 Rev. 2.0	03/12/2019			03/13/2019 12:50	Ping Hua	2068842
	03/12/2019			03/14/2019 11:46	Ping Hua	2068850
	03/12/2019			03/15/2019 11:15	Ping Hua	2068840
	03/12/2019			03/15/2019 11:16	Ping Hua	2068841
	03/12/2019			03/15/2019 11:54	Ping Hua	2068846
	03/12/2019			03/15/2019 12:06	Ping Hua	2068847
	03/12/2019			03/15/2019 12:07	Ping Hua	2068848
EPA 351.2 Rev. 2.0	03/12/2019	03/14/2019 12:00	Adrian Shelby	03/15/2019 12:10	Joseph Suarez	2068842
	03/12/2019	03/14/2019 12:00	Adrian Shelby	03/15/2019 12:18	Joseph Suarez	2068846
	03/12/2019	03/14/2019 12:00	Adrian Shelby	03/15/2019 12:19	Joseph Suarez	2068847
	03/12/2019	03/14/2019 12:00	Adrian Shelby	03/15/2019 12:21	Joseph Suarez	2068848
	03/12/2019	03/14/2019 12:17	Adrian Shelby	03/15/2019 15:38	Joseph Suarez	2068840
	03/12/2019	03/15/2019 16:30	Adrian Shelby	03/19/2019 10:40	Joseph Suarez	2068841
	03/12/2019	03/15/2019 16:30	Adrian Shelby	03/19/2019 10:45	Joseph Suarez	2068850
EPA 353.2 Rev. 2.0	03/12/2019			03/15/2019 08:50	Beverly Y. Sanders	2068846
	03/12/2019			03/15/2019 10:12	Beverly Y. Sanders	2068847
	03/12/2019			03/15/2019 10:13	Beverly Y. Sanders	2068848
	03/12/2019			03/18/2019 12:08	Lauren Lees	2068840
	03/12/2019			03/18/2019 13:36	Lauren Lees	2068850
	03/12/2019			03/18/2019 13:39	Lauren Lees	2068841
	03/12/2019			03/19/2019 14:43	Lauren Lees	2068842
EPA 365.1 Rev. 2.0	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 13:19	Beverly Y. Sanders	2068842
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 13:28	Beverly Y. Sanders	2068846
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 13:29	Beverly Y. Sanders	2068847
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 13:30	Beverly Y. Sanders	2068848
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 14:08	Beverly Y. Sanders	2068840
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/19/2019 14:09	Beverly Y. Sanders	2068841
	03/12/2019	03/15/2019 14:20	Sima Feizi	03/21/2019 10:57	Beverly Y. Sanders	2068850