

Chemical Analysis Report

NW-DIST-2017-10-17-01

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

Event Description: **Bayou Chico BMAP**
Request ID: **RQ-2017-09-18-51**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-NOV-2017 15:46

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

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: 10/16/2017 11:10

Field ID: A

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936993	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P333568	
1937000	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P333616	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P333915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P333769	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P333607	

Sample Location: BAYOU CHICO AT MANDALAY PARK

Collection Date/Time: 10/16/2017 11:45

Field ID: B

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936994	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P333568	
1937001	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P333616	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P333915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P333769	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P333607	

Sample Location: JONES CREEK AT OLD CORRY ROAD

Collection Date/Time: 10/16/2017 12:15

Field ID: C

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936995	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P333568	
1937002	EPA 350.1 Rev. 2.0	Ammonia-N	0.047		mg N/L	P333891	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P334268	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P333993	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P333603	

Sample Location: JACKSON CREEK AT OLD CORRY ROAD

Collection Date/Time: 10/16/2017 12:40

Field ID: D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936996	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P333568	
1937003	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P333891	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P334268	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P333993	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P333603	

Sample Location: JACKSON CREEK AT NEW WARRINGTON ROAD

Collection Date/Time: 10/16/2017 13:20

Field ID: E

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936997	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P333568	
1937004	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P333963	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P334268	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P333993	

Field ID: E

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937004	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P333603	

Sample Location: BAYOU CHICO AT NAVY BLVD BRIDGE

Collection Date/Time: 10/16/2017 15:15

Field ID: F

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936998	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P333568	
1937005	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P333616	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P333915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P333769	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P333999	

Sample Location: BAYOU CHICO AT W STREET

Collection Date/Time: 10/16/2017 15:35

Field ID: G

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1936999	EPA 180.1 Rev. 2.0	Turbidity	4.2	A	NTU	P333569	
1937006	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P333963	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P334268	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.78		mg N/L	P333993	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P333608	

Sample Location: CLEAN EQUIPMENT BLANK

Collection Date/Time: 10/16/2017 11:00

Field ID: EB

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937029	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P333569	
1937030	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P333891	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P334268	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333994	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P333603	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P333568

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P333569

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333616

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333891

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333963

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333915

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334268

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333603

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: P333607

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333999

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: P333616

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333891

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333915

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333769

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333603

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: P333607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333999

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936843	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333891

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937003	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937004	Ammonia-N	96.5	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937000	Kjeldahl Nitrogen	98.2	93.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937006	Kjeldahl Nitrogen	92.7	93.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936848	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1936899	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937110	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937003	Total-P	97.6	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937000	Total-P	99.0	93.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937128	Total-P	95.3	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937005	Total-P	97.7	100	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936944	Turbidity	2.26	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P333569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936999	Turbidity	0.238	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936843	Ammonia-N	0.808	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937003	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937004	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937000	Kjeldahl Nitrogen	4.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937006	Kjeldahl Nitrogen	0.892	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936848	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936899	NO2NO3-N	0.952	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937110	NO2NO3-N	0.388	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937003	Total-P	1.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937000	Total-P	5.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937128	Total-P	2.15	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P333999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937005	Total-P	2.32	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: A79632
 Included Lab Sample IDs: 1936993, 1936994, 1936995, 1936996, 1936997, 1936998, 1936999, 1937029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A79639
 Included Lab Sample IDs: 1937000, 1937001, 1937005

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

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A79690
 Included Lab Sample IDs: 1937000, 1937001, 1937005

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: A79711
 Included Lab Sample IDs: 1937000, 1937001, 1937002, 1937003, 1937004, 1937006, 1937030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.5	P/P	90 - 110
Total-P	97.5	99.0	P/P	90 - 110
Total-P	97.8	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A79747
 Included Lab Sample IDs: 1937002, 1937003, 1937030

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A79772
Included Lab Sample IDs: 1937004, 1937006

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A79780
Included Lab Sample IDs: 1937002, 1937003, 1937004, 1937006, 1937030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A79845
Included Lab Sample IDs: 1937000, 1937001, 1937005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.6	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A79852
Included Lab Sample IDs: 1937005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A79931
Included Lab Sample IDs: 1937002, 1937003, 1937004, 1937006, 1937030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	98.1	P/P	90 - 110
Kjeldahl Nitrogen	97.9	95.1	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 180.1 Rev. 2.0	Turbidity				2.26	
	Turbidity				0.238	
EPA 350.1 Rev. 2.0	Ammonia-N	104	106	105		0.808
	Ammonia-N	102	104	105		1.28
	Ammonia-N	94.0	96.5	98.1		1.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	98.2	93.5		4.08
	Kjeldahl Nitrogen	93.6	92.7	93.8		0.892
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	103		0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	103	106	104		0.952
	NO2NO3-N	104	102			0.388
EPA 365.1 Rev. 2.0	Total-P	100	97.6	99.4		1.61
	Total-P	99.7	99.0	93.6		5.58
	Total-P	97.2	95.3	97.7		2.15
	Total-P	103	97.7	100		2.32

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1936993, 1936994, 1936995, 1936996, 1936997, 1936998, 1936999, 1937029
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1937000, 1937001, 1937002, 1937003, 1937004, 1937005, 1937006, 1937030
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1937000, 1937001, 1937002, 1937003, 1937004, 1937005, 1937006, 1937030
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1937000, 1937001, 1937002, 1937003, 1937004, 1937005, 1937006, 1937030
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1937000, 1937001, 1937002, 1937003, 1937004, 1937005, 1937006, 1937030

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	10/17/2017			10/17/2017 15:46	DeAsia Armster	1936993, 1936994, 1936995, 1936996, 1936997, 1936998, 1936999, 1937029
EPA 350.1 Rev. 2.0	10/17/2017			10/18/2017	Sofia Elnemr	1937000, 1937001, 1937005
	10/17/2017			10/23/2017	Sofia Elnemr	1937002, 1937003, 1937030
	10/17/2017			10/24/2017	Sofia Elnemr	1937004, 1937006
EPA 351.2 Rev. 2.0	10/17/2017	10/24/2017	Adrian Shelby	10/25/2017	Tanya Welborn	1937000, 1937001, 1937005
	10/17/2017	10/30/2017	Adrian Shelby	10/30/2017	Joseph Suarez	1937002, 1937003, 1937004, 1937006, 1937030
EPA 353.2 Rev. 2.0	10/17/2017			10/20/2017	Beverly Y. Sanders	1937000, 1937001, 1937005
	10/17/2017			10/24/2017	Beverly Y. Sanders	1937002, 1937003, 1937004, 1937006, 1937030
EPA 365.1 Rev. 2.0	10/17/2017	10/18/2017	Sima Feizi	10/20/2017	Lipi Saha	1937000, 1937001, 1937002, 1937003, 1937004, 1937006, 1937030
	10/17/2017	10/25/2017	Sima Feizi	10/27/2017	Lipi Saha	1937005