

Chemical Analysis Report

NW-DIST-2019-06-11-02

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-2019-05-13-31**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
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160 Government Center
Suite 308
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 02-JUL-2019 18:03



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: Equipment Blank

Collection Date/Time: 06/10/2019 10:40

Field ID: BMAP_EB

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094358	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P365442	
2094360	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P365765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P366055	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365753	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P365684	

Sample Location: Pensacola Bay at Sanders Beach

Collection Date/Time: 06/10/2019 10:45

Field ID: 33020J10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094359	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P365442	
2094361	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P365767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P365979	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P365942	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P365751	

Sample Location: Bayou Chico at Mandalay Drive

Collection Date/Time: 06/10/2019 11:15

Field ID: 33020JD4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094346	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P365443	
2094349	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P365764	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P365979	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P365942	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P365682	

Sample Location: Jackson Creek @ Old Corry Road

Collection Date/Time: 06/10/2019 12:20

Field ID: 33020221

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094352	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P365443	
2094355	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P365762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P366055	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.5		mg N/L	P366073	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P365683	

Sample Location: Jackson Creek at New Warrington Road

Collection Date/Time: 06/10/2019 12:45

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094353	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P365442	
2094356	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P365762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P366055	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P365753	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P365683	

Sample Location: Jones Creek Upstream of New Warrington Rd Collection Date/Time: 06/10/2019 13:40

Field ID: 33020117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094354	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P365442	
2094357	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P365765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P366055	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P365753	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P365683	

Sample Location: Bayou Chico at Navy Blvd.

Collection Date/Time: 06/10/2019 14:05

Field ID: 3302JE20

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094347	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P365443	
2094350	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P365764	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P365979	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.42		mg N/L	P365942	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P365682	

Sample Location: Bayou Chico at W St. Bridge

Collection Date/Time: 06/10/2019 14:25

Field ID: 33020JF1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2094348	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P365443	
2094351	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P365762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P365981	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.74		mg N/L	P365753	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P365683	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365442

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365443

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365762

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365764

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365765

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365767

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365979

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365981

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366055

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365753

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365942

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366073

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365682

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365683

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365684

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365751

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: P365762

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365764

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: P365765

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: P365767

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365979

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365981

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: P366055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365753

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: P365942

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366073

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365682

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365683

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365684

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365751

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094355	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093119	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094357	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094808	Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094157	Kjeldahl Nitrogen	107	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094258	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094356	Kjeldahl Nitrogen	103	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094323	NO2NO3-N	106	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093151	NO2NO3-N	96.6	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094886	NO2NO3-N	98.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093116	Total-P	92.6	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094355	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094400	Total-P	102	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094727	Total-P	96.2	92.9	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094263	Turbidity	2.91	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094348	Turbidity	4.42	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094355	Ammonia-N	0.775	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093119	Ammonia-N	0.267	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094357	Ammonia-N	0.716	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094808	Ammonia-N	0.0777	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094157	Kjeldahl Nitrogen	4.34	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094258	Kjeldahl Nitrogen	1.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094356	Kjeldahl Nitrogen	3.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094323	NO2NO3-N	2.40	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093151	NO2NO3-N	0.457	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094886	NO2NO3-N	1.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093116	Total-P	1.95	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094355	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094400	Total-P	3.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094727	Total-P	3.46	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: A92019

Included Lab Sample IDs: 2094346, 2094347, 2094348, 2094352, 2094353, 2094354, 2094358, 2094359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	97.5	P/P	95 - 105
Turbidity	99.0	98.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92141

Included Lab Sample IDs: 2094351, 2094356, 2094357, 2094360

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92142

Included Lab Sample IDs: 2094349, 2094350, 2094351, 2094355, 2094356, 2094357, 2094360, 2094361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110
Ammonia-N	102	104	P/P	90 - 110
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92150

Included Lab Sample IDs: 2094351

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92151

Included Lab Sample IDs: 2094349, 2094350, 2094355, 2094356, 2094357, 2094360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.5	P/P	90 - 110
Total-P	99.8	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92185

Included Lab Sample IDs: 2094361

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92205

Included Lab Sample IDs: 2094349, 2094350, 2094361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92237

Included Lab Sample IDs: 2094355

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92276

Included Lab Sample IDs: 2094349, 2094350, 2094361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92328

Included Lab Sample IDs: 2094351

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92333

Included Lab Sample IDs: 2094355, 2094356, 2094357, 2094360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	99.7	P/P	90 - 110
Kjeldahl Nitrogen	99.7	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.91	
	Turbidity					4.42	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	100			0.775
	Ammonia-N	102	104	104			0.267
	Ammonia-N	102	102	103			0.716
	Ammonia-N	104	105	105			0.0777
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	107	102			4.34
	Kjeldahl Nitrogen	104	107	104			1.46
	Kjeldahl Nitrogen	105	103	98.6			3.48
EPA 353.2 Rev. 2.0	NO2NO3-N	100	106	103			2.40
	NO2NO3-N	99.5	96.6	96.2			0.457
	NO2NO3-N	100	98.5	100			1.51
EPA 365.1 Rev. 2.0	Total-P	106	92.6	94.4			1.95
	Total-P	99.8	104	102			1.76
	Total-P	102	102	105			3.12
	Total-P	106	96.2	92.9			3.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2094346, 2094347, 2094348, 2094352, 2094353, 2094354, 2094358, 2094359
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2094349, 2094350, 2094351, 2094355, 2094356, 2094357, 2094360, 2094361
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2094349, 2094350, 2094351, 2094355, 2094356, 2094357, 2094360, 2094361
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2094349, 2094350, 2094351, 2094355, 2094356, 2094357, 2094360, 2094361
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2094349, 2094350, 2094351, 2094355, 2094356, 2094357, 2094360, 2094361

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	06/11/2019			06/11/2019 16:05	Julia Storbeck	2094346, 2094347, 2094348, 2094352, 2094353, 2094354, 2094358, 2094359
EPA 350.1 Rev. 2.0	06/11/2019			06/14/2019 15:28	Ping Hua	2094355
	06/11/2019			06/14/2019 15:48	Ping Hua	2094351
	06/11/2019			06/14/2019 15:49	Ping Hua	2094356
	06/11/2019			06/14/2019 16:35	Ping Hua	2094349
	06/11/2019			06/14/2019 16:36	Ping Hua	2094350
	06/11/2019			06/14/2019 16:47	Ping Hua	2094357
	06/11/2019			06/14/2019 17:09	Ping Hua	2094360
	06/11/2019			06/14/2019 17:51	Ping Hua	2094361
EPA 351.2 Rev. 2.0	06/11/2019	06/19/2019 12:00	Adrian Shelby	06/21/2019 11:12	Joseph Suarez	2094349
	06/11/2019	06/19/2019 12:00	Adrian Shelby	06/21/2019 11:13	Joseph Suarez	2094350
	06/11/2019	06/19/2019 12:00	Adrian Shelby	06/21/2019 11:15	Joseph Suarez	2094361
	06/11/2019	06/19/2019 12:00	Adrian Shelby	06/24/2019 15:41	Joseph Suarez	2094351
	06/11/2019	06/20/2019 12:00	Adrian Shelby	06/25/2019 12:32	Joseph Suarez	2094355
	06/11/2019	06/20/2019 12:00	Adrian Shelby	06/25/2019 12:37	Joseph Suarez	2094356
	06/11/2019	06/20/2019 12:00	Adrian Shelby	06/25/2019 12:41	Joseph Suarez	2094357
	06/11/2019	06/20/2019 12:00	Adrian Shelby	06/25/2019 12:43	Joseph Suarez	2094360
EPA 353.2 Rev. 2.0	06/11/2019			06/17/2019 10:19	Beverly Y. Sanders	2094351
	06/11/2019			06/17/2019 10:22	Beverly Y. Sanders	2094360
	06/11/2019			06/17/2019 12:35	Beverly Y. Sanders	2094356
	06/11/2019			06/17/2019 12:37	Beverly Y. Sanders	2094357
	06/11/2019			06/19/2019 09:57	Beverly Y. Sanders	2094349
	06/11/2019			06/19/2019 09:58	Beverly Y. Sanders	2094350
	06/11/2019			06/19/2019 09:59	Beverly Y. Sanders	2094361
	06/11/2019			06/20/2019 13:43	Beverly Y. Sanders	2094355
EPA 365.1 Rev. 2.0	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 13:17	Julia Storbeck	2094351
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 17:50	Julia Storbeck	2094349
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 17:58	Julia Storbeck	2094350
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 18:01	Julia Storbeck	2094355
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 18:05	Julia Storbeck	2094356
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 18:06	Julia Storbeck	2094357
	06/11/2019	06/14/2019 12:55	Sima Feizi	06/17/2019 18:15	Julia Storbeck	2094360
	06/11/2019	06/17/2019 12:20	Sima Feizi	06/18/2019 16:32	Rosalyn Ballman	2094361