

Chemical Analysis Report

NW-DIST-2019-12-11-01

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-2019-11-04-45**
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: Colin Wright, Program Administrator

Date Certified: 23-DEC-2019 10:02



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 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: 12/09/2019 10:50

Field ID: BMAP_EB

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142239	EPA 180.1 Rev. 2.0	Turbidity	0.10	UQ	NTU	P375708	
2142241	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P375970	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P375959	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375890	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P375704	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

Sample Location: Pensacola Bay at Sanders Beach

Collection Date/Time: 12/09/2019 10:45

Field ID: 33020J10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142240	EPA 180.1 Rev. 2.0	Turbidity	1.1	Q	NTU	P375708	
2142242	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P375971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P375691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P376047	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P375822	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

Sample Location: Bayou Chico at Mandalay Drive

Collection Date/Time: 12/09/2019 11:20

Field ID: 33020JD4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142227	EPA 180.1 Rev. 2.0	Turbidity	2.0	AQ	NTU	P375708	
2142230	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P375971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P375691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P376046	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P375700	MS

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

Sample Location: Jackson Creek @ Old Corry Road

Collection Date/Time: 12/09/2019 12:15

Field ID: 33020221

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142233	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P375706	
2142236	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P375970	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P375689	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.2		mg N/L	P375890	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P375704	

Sample Location: Jackson Creek at New Warrington Road

Collection Date/Time: 12/09/2019 12:35

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142234	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P375706	
2142237	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P375970	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P375689	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.9		mg N/L	P375890	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P375704	

Sample Location: Jones Creek Upstream of New Warrington Rd Collection Date/Time: 12/09/2019 12:55

Field ID: 33020117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142235	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P375706	
2142238	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P375970	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P375959	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P375890	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P375704	

Sample Location: Bayou Chico at Navy Blvd. Bridge

Collection Date/Time: 12/09/2019 13:50

Field ID: 3302JE20

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142228	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P375706	
2142231	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P375971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P375691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.62		mg N/L	P376046	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P375700	MS

Sample Location: Bayou Chico at W St. Bridge

Collection Date/Time: 12/09/2019 14:10

Field ID: 33020JF1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2142229	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P375706	
2142232	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P375971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P375691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P376047	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P375700	MS

Non-Conformance Report

NCR ID: 8065

Event(s)

NW-DIST-2019-12-11-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 12/17/2019

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: P375706

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375708

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375970

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375971

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375689

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375691

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375959

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375890

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376046

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376047

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375700

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375822

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: P375970

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375971

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375689

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375691

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375959

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375890

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: P376046

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: P376047

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375700

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375822

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: P375970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142107	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142230	Ammonia-N	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142236	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141847	Kjeldahl Nitrogen	104	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142322	Kjeldahl Nitrogen	97.8	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375890

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142238	NO2NO3-N	97.4	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141726	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142242	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141847	Total-P	100	110	P/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2142236	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141408	Total-P	97.1	101	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142508	Turbidity	6.06	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142227	Turbidity	2.05	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142107	Ammonia-N	0.698	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142230	Ammonia-N	1.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142236	Kjeldahl Nitrogen	1.43	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141847	Kjeldahl Nitrogen	6.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142322	Kjeldahl Nitrogen	0.192	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142238	NO2NO3-N	1.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141726	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142242	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141847	Total-P	8.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142236	Total-P	0.0236	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141408	Total-P	3.74	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96288

Included Lab Sample IDs: 2142227, 2142228, 2142229, 2142233, 2142234, 2142235, 2142239, 2142240

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96318

Included Lab Sample IDs: 2142236, 2142237

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96327

Included Lab Sample IDs: 2142230, 2142231, 2142232, 2142242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96357

Included Lab Sample IDs: 2142236, 2142237, 2142238, 2142241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110
NO2NO3-N	101	101	P/P	90 - 110
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96377

Included Lab Sample IDs: 2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	101	101	P/P	90 - 110
Total-P	101	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96389

Included Lab Sample IDs: 2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241, 2142242

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96409

Included Lab Sample IDs: 2142242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96419

Included Lab Sample IDs: 2142230, 2142231, 2142232, 2142242

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	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96455

Included Lab Sample IDs: 2142238, 2142241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	104	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					6.06	
	Turbidity					2.05	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	101			0.698
	Ammonia-N	101	106	104			1.06
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	102	101			1.43
	Kjeldahl Nitrogen	103	104	96.4			6.21
	Kjeldahl Nitrogen	98.6	97.8	98.1			0.192
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.4	98.8			1.37
	NO2NO3-N	100	100	100			0.499
	NO2NO3-N	99.5	101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	108	100	110			8.59
	Total-P	107	101	101			0.0236
	Total-P	103	97.1	101			3.74

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2142227, 2142228, 2142229, 2142233, 2142234, 2142235, 2142239, 2142240
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241, 2142242
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241, 2142242
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241, 2142242
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2142230, 2142231, 2142232, 2142236, 2142237, 2142238, 2142241, 2142242

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	12/11/2019			12/11/2019 11:46	Yen Ta	2142233
	12/11/2019			12/11/2019 11:49	Yen Ta	2142234
	12/11/2019			12/11/2019 11:51	Yen Ta	2142235
	12/11/2019			12/11/2019 11:52	Yen Ta	2142228
	12/11/2019			12/11/2019 11:53	Yen Ta	2142229
	12/11/2019			12/11/2019 14:35	Yen Ta	2142240
	12/11/2019			12/11/2019 17:15	Yen Ta	2142227, 2142239
	12/11/2019			12/16/2019 12:13	Ping Hua	2142236
EPA 350.1 Rev. 2.0	12/11/2019			12/16/2019 12:15	Ping Hua	2142237
	12/11/2019			12/16/2019 12:16	Ping Hua	2142238
	12/11/2019			12/16/2019 12:21	Ping Hua	2142241
	12/11/2019			12/16/2019 12:31	Ping Hua	2142230
	12/11/2019			12/16/2019 12:36	Ping Hua	2142231
	12/11/2019			12/16/2019 12:37	Ping Hua	2142232
	12/11/2019			12/16/2019 12:39	Ping Hua	2142242
EPA 351.2 Rev. 2.0	12/11/2019	12/12/2019 12:25	Sima Feizi	12/13/2019 15:32	Jhamieka S. Greenwood	2142230
	12/11/2019	12/12/2019 12:25	Sima Feizi	12/13/2019 15:33	Jhamieka S. Greenwood	2142231
	12/11/2019	12/12/2019 12:25	Sima Feizi	12/13/2019 15:35	Jhamieka S. Greenwood	2142232
	12/11/2019	12/12/2019 12:25	Sima Feizi	12/13/2019 15:36	Jhamieka S. Greenwood	2142242
	12/11/2019	12/12/2019 12:35	Sima Feizi	12/13/2019 13:30	Jhamieka S. Greenwood	2142236
	12/11/2019	12/12/2019 12:35	Sima Feizi	12/13/2019 13:50	Jhamieka S. Greenwood	2142237
	12/11/2019	12/17/2019 12:25	Sima Feizi	12/18/2019 16:44	Jhamieka S. Greenwood	2142238
	12/11/2019	12/17/2019 12:25	Sima Feizi	12/18/2019 16:45	Jhamieka S. Greenwood	2142241
EPA 353.2 Rev. 2.0	12/11/2019			12/13/2019 09:58	Beverly Y. Sanders	2142241
	12/11/2019			12/13/2019 11:31	Beverly Y. Sanders	2142238
	12/11/2019			12/13/2019 11:35	Beverly Y. Sanders	2142236
	12/11/2019			12/13/2019 11:39	Beverly Y. Sanders	2142237
	12/11/2019			12/18/2019 10:24	Beverly Y. Sanders	2142230
	12/11/2019			12/18/2019 10:25	Beverly Y. Sanders	2142231
	12/11/2019			12/18/2019 10:38	Beverly Y. Sanders	2142242
	12/11/2019			12/18/2019 11:54	Beverly Y. Sanders	2142232
EPA 365.1 Rev. 2.0	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:16	Benjamin T. Nordmann	2142230
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:17	Benjamin T. Nordmann	2142231
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:18	Benjamin T. Nordmann	2142232
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:53	Benjamin T. Nordmann	2142236
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:54	Benjamin T. Nordmann	2142237
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 17:55	Benjamin T. Nordmann	2142238
	12/11/2019	12/12/2019 10:19	Yen Ta	12/16/2019 18:08	Benjamin T. Nordmann	2142241
	12/11/2019	12/13/2019 14:35	Yen Ta	12/17/2019 15:43	Benjamin T. Nordmann	2142242