Chemical Analysis Report

NW-DIST-2019-08-13-03

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-2019-07-08-23**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 26-AUG-2019 11:16

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: 08/12/2019 10:40**

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

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111045	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P368960	
2111046	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P369249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P369220	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P369114	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P369026	

Sample Location: Bayou Chico at Mandalay Drive **Collection Date/Time: 08/12/2019 11:15**

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

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111033	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P368959	
2111036	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P369249	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P369220	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.32		mg N/L	P369114	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P369026	

Sample Location: Jackson Creek @ Old Corry Road **Collection Date/Time: 08/12/2019 12:15**

Field ID: 33020221 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111039	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P368959	
2111042	EPA 350.1 Rev. 2.0	Ammonia-N	0.098		mg N/L	P369250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	J	mg N/L	P369223	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P369037	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P369028	

Ref. Method and Comment:
EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: Jackson Creek at New Warrington Road **Collection Date/Time: 08/12/2019 12:30**

Field ID: 33020222 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111040	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P368959	
2111043	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P369250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P369223	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.8		mg N/L	P369037	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P369028	

Sample Location: Jones Creek Upstream of New Warrington Rd **Collection Date/Time: 08/12/2019 12:50**

Field ID: 33020117 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111041	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P368960	
2111044	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P369250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P369223	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P369037	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P369103	

Sample Location: Bayou Chico at Navy Blvd. Bridge **Collection Date/Time: 08/12/2019 13:50**

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

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111034	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P368959	
2111037	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P369250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P369235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.47		mg N/L	P369035	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P369028	

Sample Location: Bayou Chico @ W Street **Collection Date/Time: 08/12/2019 14:20**

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

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2111035	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P368959	
2111038	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P369250	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P369235	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.45		mg N/L	P369037	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P369028	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368959

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368960

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369249

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369220

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369223

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369235

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369035

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369037

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: P369114

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369026

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369028

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369103

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: P369249

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369250

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369220

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369235

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369035

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: P369037

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369114

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369026

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369028

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: P369103

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111036	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110890	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111138	Kjeldahl Nitrogen	97.2	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111042	Kjeldahl Nitrogen	87.7	89.8	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111215	Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110849	NO2NO3-N	96.5	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111044	NO2NO3-N	98.1	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110963	NO2NO3-N	97.4	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111036	Total-P	98.4	95.4	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2110871	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2111213	Total-P	105	101	P/P	90 - 110

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110952	Turbidity	6.07	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111058	Turbidity	2.65	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111036	Ammonia-N	0.541	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110890	Ammonia-N	0.688	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111138	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111042	Kjeldahl Nitrogen	1.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P369235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111215	Kjeldahl Nitrogen	2.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110849	NO2NO3-N	0.549	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111044	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P369114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110963	NO2NO3-N	0.512	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111036	Total-P	3.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2110871	Total-P	2.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P369103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2111213	Total-P	3.41	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: A93474
Included Lab Sample IDs: 2111033, 2111034, 2111035, 2111039, 2111040, 2111041, 2111045

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A93511
Included Lab Sample IDs: 2111037, 2111038, 2111042, 2111043, 2111044

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	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A93536
Included Lab Sample IDs: 2111036, 2111046

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: A93538
Included Lab Sample IDs: 2111036, 2111037, 2111038, 2111042, 2111043, 2111046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	P/P	90 - 110
Total-P	99.0	98.5	P/P	90 - 110
Total-P	99.0	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A93567
Included Lab Sample IDs: 2111044

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A93593
Included Lab Sample IDs: 2111036, 2111037, 2111038, 2111042, 2111043, 2111044, 2111046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	105	105	P/P	90 - 110
Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93600
Included Lab Sample IDs: 2111036, 2111046

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93624
Included Lab Sample IDs: 2111042, 2111043, 2111044

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	94.9	P/P	90 - 110
Kjeldahl Nitrogen	95.4	94.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A93647
Included Lab Sample IDs: 2111037, 2111038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	96.5	P/P	90 - 110
Kjeldahl Nitrogen	99.1	96.2	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					6.07	
	Turbidity					2.65	
EPA 350.1 Rev. 2.0	Ammonia-N	105	106	105			0.541
	Ammonia-N	102	103	102			0.688
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	97.2	99.7			1.79
	Kjeldahl Nitrogen	93.3	87.7	89.8			1.91
	Kjeldahl Nitrogen	106	101	105			2.63
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.5	97.5			0.549
	NO2NO3-N	101	98.1	98.1			0.0
	NO2NO3-N	102	97.4	97.9			0.512
EPA 365.1 Rev. 2.0	Total-P	104	98.4	95.4			3.08
	Total-P	100	100	102			2.15
	Total-P	102	105	101			3.41

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2111033, 2111034, 2111035, 2111039, 2111040, 2111041, 2111045
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2111036, 2111037, 2111038, 2111042, 2111043, 2111044, 2111046
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2111036, 2111037, 2111038, 2111042, 2111043, 2111044, 2111046
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2111036, 2111037, 2111038, 2111042, 2111043, 2111044, 2111046
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2111036, 2111037, 2111038, 2111042, 2111043, 2111044, 2111046

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/13/2019			08/13/2019 16:20	Samantha Davila	2111033, 2111034, 2111035, 2111039, 2111040, 2111041, 2111045
EPA 350.1 Rev. 2.0	08/13/2019			08/16/2019 13:04	Ping Hua	2111036
	08/13/2019			08/16/2019 13:32	Ping Hua	2111046
	08/13/2019			08/16/2019 13:37	Ping Hua	2111042
	08/13/2019			08/16/2019 13:52	Ping Hua	2111038
	08/13/2019			08/16/2019 13:54	Ping Hua	2111037
	08/13/2019			08/16/2019 13:55	Ping Hua	2111043
	08/13/2019			08/16/2019 13:57	Ping Hua	2111044
EPA 351.2 Rev. 2.0	08/13/2019	08/16/2019 14:55	Sima Feizi	08/20/2019 08:48	Joseph Suarez	2111042
	08/13/2019	08/16/2019 14:55	Sima Feizi	08/20/2019 08:56	Joseph Suarez	2111043
	08/13/2019	08/16/2019 14:55	Sima Feizi	08/20/2019 08:57	Joseph Suarez	2111044
	08/13/2019	08/16/2019 15:10	Sima Feizi	08/19/2019 11:02	Joseph Suarez	2111036
	08/13/2019	08/16/2019 15:10	Sima Feizi	08/19/2019 11:04	Joseph Suarez	2111046
	08/13/2019	08/19/2019 13:30	Sima Feizi	08/20/2019 12:55	Joseph Suarez	2111037
	08/13/2019	08/19/2019 13:30	Sima Feizi	08/20/2019 13:00	Joseph Suarez	2111038
EPA 353.2 Rev. 2.0	08/13/2019			08/14/2019 13:35	Beverly Y. Sanders	2111037
	08/13/2019			08/14/2019 14:05	Beverly Y. Sanders	2111038
	08/13/2019			08/14/2019 14:33	Beverly Y. Sanders	2111044
	08/13/2019			08/14/2019 14:40	Beverly Y. Sanders	2111042
	08/13/2019			08/14/2019 14:41	Beverly Y. Sanders	2111043
	08/13/2019			08/15/2019 12:00	Beverly Y. Sanders	2111036
	08/13/2019			08/15/2019 12:01	Beverly Y. Sanders	2111046
EPA 365.1 Rev. 2.0	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 14:43	Lipi Saha	2111036
	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 14:45	Lipi Saha	2111046
	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 15:06	Lipi Saha	2111037
	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 15:07	Lipi Saha	2111038
	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 15:14	Lipi Saha	2111042
	08/13/2019	08/14/2019 12:19	Vijayalakshmi Reddy	08/15/2019 15:15	Lipi Saha	2111043
	08/13/2019	08/15/2019 13:11	Vijayalakshmi Reddy	08/16/2019 13:17	Lipi Saha	2111044