

Chemical Analysis Report

WQAP-2016-08-24-03

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

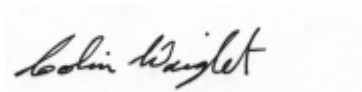
Event Description: **Lake Istokpoga**
Request ID: **RQ-2016-08-08-52**
Customer: **WQAP**
Project ID: **SPPROJECTS**

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

Date Certified: 12-SEP-2016 11:06

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned above a light gray rectangular box.

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: LAKE ISTOKPOGA ALGAE SE

Collection Date/Time: 08/23/2016 09:25

Field ID: G4SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826385	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P310292	
	SM 2120 B	Color (true)	110		PCU	P310275	
	SM 2540 D-97	TSS	12		mg/L	P310785	
1826391	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P310408	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P310631	
1826397	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310270	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE S

Collection Date/Time: 08/23/2016 08:55

Field ID: G4SD0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826386	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P310292	
	SM 2120 B	Color (true)	80		PCU	P310275	
	SM 2540 D-97	TSS	17		mg/L	P310785	
1826392	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P310409	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P310631	
1826398	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310270	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE NE

Collection Date/Time: 08/23/2016 10:10

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826387	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P310292	
	SM 2120 B	Color (true)	190		PCU	P310276	
	SM 2540 D-97	TSS	4	I	mg/L	P310785	
1826393	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P310409	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P310631	
1826399	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P310270	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE NW

Collection Date/Time: 08/23/2016 10:35

Field ID: G4SD0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826388	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P310292	
	SM 2120 B	Color (true)	130		PCU	P310276	
	SM 2540 D-97	TSS	9	I	mg/L	P310785	
1826394	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P310409	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P310631	
1826400	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310272	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE CEN

Collection Date/Time: 08/23/2016 09:50

Field ID: G4SD0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826389	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P310292	
	SM 2120 B	Color (true)	130		PCU	P310276	
	SM 2540 D-97	TSS	12		mg/L	P310785	
1826395	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P310409	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P310631	
1826401	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310272	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LAKE ISTOKPOGA ALGAE W

Collection Date/Time: 08/23/2016 10:50

Field ID: G4SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1826390	EPA 180.1 Rev. 2.0	Turbidity	6.5	A	NTU	P310293	
	SM 2120 B	Color (true)	110		PCU	P310276	
	SM 2540 D-97	TSS	12		mg/L	P310785	
1826396	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P310462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P310467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P310596	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P310409	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P310632	
1826402	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P310272	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310292

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310293

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310462

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310467

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310596

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310409

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310270

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310272

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P310275

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P310276

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P310785

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 5310 B-00
Batch ID: P310631

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P310632

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310462

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: P310467

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: P310596

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: P310408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310409

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310270

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P310631

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310632

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826391	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826320	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826369	Total-P	98.8	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826454	Total-P	98.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826322	O-Phosphate-P	96.1	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826462	O-Phosphate-P	98.1	99.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P310631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826363	Organic Carbon	108	106	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P310632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1826396	Organic Carbon	109	106	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826355	Turbidity	4.73	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P310293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826390	Turbidity	1.38	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P310462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826391	Ammonia-N	0.0999	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P310467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826395	Kjeldahl Nitrogen	2.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P310596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826320	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826369	Total-P	1.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P310409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826454	Total-P	1.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826322	O-Phosphate-P	0.984	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P310272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826462	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P310275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826215	Color (true)	0.467	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P310276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826448	Color (true)	2.55	Sample	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P310631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826363	Organic Carbon	1.49	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P310632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1826396	Organic Carbon	1.46	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 365.1 Rev. 2.0 dissolved
Run ID: A71305
Included Lab Sample IDs: 1826397, 1826398, 1826399, 1826400, 1826401, 1826402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.9	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A71306
Included Lab Sample IDs: 1826385, 1826386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	98.6	P/P	85 - 115

Reference Method: SM 2120 B
Run ID: A71307
Included Lab Sample IDs: 1826387, 1826388, 1826389, 1826390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	104	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A71313
Included Lab Sample IDs: 1826385, 1826386, 1826387, 1826388, 1826389, 1826390

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A71313

Included Lab Sample IDs: 1826385, 1826386, 1826387, 1826388, 1826389, 1826390

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71357

Included Lab Sample IDs: 1826392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.8	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A71365

Included Lab Sample IDs: 1826391, 1826392, 1826393, 1826394, 1826395, 1826396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A71368

Included Lab Sample IDs: 1826391, 1826393, 1826394, 1826395, 1826396

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A71398

Included Lab Sample IDs: 1826391, 1826392, 1826393, 1826394, 1826395, 1826396

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A71414

Included Lab Sample IDs: 1826391, 1826392, 1826393, 1826394, 1826395, 1826396

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

Reference Method: SM 5310 B-00

Run ID: A71430

Included Lab Sample IDs: 1826391, 1826392, 1826393, 1826394, 1826395, 1826396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	106	P/P	90 - 110
Organic Carbon	106	106	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					4.73	
	Turbidity					1.38	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	102			0.0999
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106					2.23
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	106	104			1.43
EPA 365.1 Rev. 2.0	Total-P	98.0	98.8	97.7			1.08
	Total-P	97.2	98.8	101			1.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.1	97.3			0.984
	O-Phosphate-P	99.0	98.1	99.7			1.40
SM 2120 B	Color (true)					0.467	
	Color (true)					2.55	
SM 5310 B-00	Organic Carbon	107	108	106			1.49
	Organic Carbon	107	109	106			1.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1826385, 1826386, 1826387, 1826388, 1826389, 1826390
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1826397, 1826398, 1826399, 1826400, 1826401, 1826402
SM 2120 B / E31780	True Color measured at 450 nm	1826385, 1826386, 1826387, 1826388, 1826389, 1826390
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1826385, 1826386, 1826387, 1826388, 1826389, 1826390
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1826391, 1826392, 1826393, 1826394, 1826395, 1826396

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	08/24/2016			08/24/2016 15:45	Sima Feizi	1826385, 1826386, 1826387, 1826388, 1826389, 1826390
EPA 350.1 Rev. 2.0	08/24/2016			08/26/2016	Joseph Suarez	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 351.2 Rev. 2.0	08/24/2016	08/29/2016	Adrian Shelby	08/30/2016	Christopher Armour	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 353.2 Rev. 2.0	08/24/2016			08/30/2016	Beverly Y. Sanders	1826391, 1826392, 1826393, 1826394, 1826395, 1826396
EPA 365.1 Rev. 2.0	08/24/2016	08/26/2016	Vijayalakshmi Reddy	08/26/2016	Lipi Saha	1826391, 1826393, 1826394, 1826395, 1826396
EPA 365.1 Rev. 2.0 dissolved	08/24/2016	08/26/2016	Vijayalakshmi Reddy	08/28/2016	Virginia P. Brown	1826392
	08/24/2016			08/24/2016 16:35	Julia Storbeck	1826397, 1826398
	08/24/2016			08/24/2016 16:36	Julia Storbeck	1826399
	08/24/2016			08/24/2016 16:41	Julia Storbeck	1826400
	08/24/2016			08/24/2016 16:42	Julia Storbeck	1826401
SM 2120 B	08/24/2016			08/24/2016 16:43	Julia Storbeck	1826402
	08/24/2016			08/24/2016 16:44	Rochelle Y Jackson	1826385
	08/24/2016			08/24/2016 16:45	Rochelle Y Jackson	1826386
	08/24/2016			08/24/2016 17:38	Rochelle Y Jackson	1826387
	08/24/2016			08/24/2016 17:39	Rochelle Y Jackson	1826388, 1826389
SM 2540 D-97	08/24/2016			08/24/2016 17:40	Rochelle Y Jackson	1826390
	08/24/2016			08/29/2016	Yijie Li	1826385, 1826386, 1826387, 1826388, 1826389, 1826390
SM 5310 B-00	08/24/2016			08/31/2016	Sofia Elnemr	1826391, 1826392, 1826393, 1826394, 1826395, 1826396