

Chemical Analysis Report

WQAP-2017-03-30-05

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

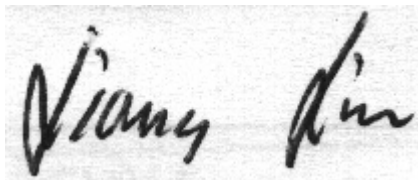
Event Description: **Lake Istokpoga**
Request ID: **RQ-2017-03-06-01**
Customer: **WQAP**
Project ID: **SPPROJECTS**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-APR-2017 12:53

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

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Lake Istokpoga Algae S

Collection Date/Time: 03/29/2017 08:45

Field ID: G4SD0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884815	EPA 180.1 Rev. 2.0	Turbidity	7.7	A	NTU	P322545	
	SM 2120 B	Color (true)	67	A	PCU	P322524	
	SM 2540 D-97	TSS	21	I	mg/L	P322879	
1884821	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P322632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P322704	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P322612	
1884827	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322538	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

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 SE

Collection Date/Time: 03/29/2017 09:08

Field ID: G4SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884816	EPA 180.1 Rev. 2.0	Turbidity	7.1		NTU	P322545	
	SM 2120 B	Color (true)	64		PCU	P322524	
	SM 2540 D-97	TSS	21	I	mg/L	P322879	
1884822	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P322632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P322612	
1884828	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P322538	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

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: 03/29/2017 09:31

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884817	EPA 180.1 Rev. 2.0	Turbidity	7.4		NTU	P322545	
	SM 2120 B	Color (true)	65		PCU	P322524	
	SM 2540 D-97	TSS	19		mg/L	P322879	
1884823	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P322632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P322612	
1884829	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322538	

Field ID: G4SD0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: 03/29/2017 09:48

Field ID: G4SD0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884818	EPA 180.1 Rev. 2.0	Turbidity	9.0		NTU	P322545	
	SM 2120 B	Color (true)	65		PCU	P322524	
	SM 2540 D-97	TSS	24	I	mg/L	P322879	
1884824	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P322632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P322612	
1884830	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P322538	
	dissolved						

Ref. Method and Comment:
 SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.
 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: 03/29/2017 10:04

Field ID: G4SD0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884819	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P322545	
	SM 2120 B	Color (true)	65		PCU	P322524	
	SM 2540 D-97	TSS	26		mg/L	P322879	
1884825	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P322632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P322612	
1884831	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P322538	
	dissolved						

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: 03/29/2017 10:24

Field ID: G4SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884820	EPA 180.1 Rev. 2.0	Turbidity	9.8		NTU	P322545	
	SM 2120 B	Color (true)	66		PCU	P322524	
	SM 2540 D-97	TSS	24	I	mg/L	P322879	
1884826	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P322604	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P322633	

Field ID: G4SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884826	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322720	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P322705	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P322612	
1884832	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322538	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322545

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322604

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322632

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322704

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

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

Reference Method: SM 2120 B
Batch ID: P322524

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P322879

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 5310 B-00
Batch ID: P322612

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: P322604

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: P322632

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: P322633

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

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: P322704

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: P322704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

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

Reference Method: SM 5310 B-00
Batch ID: P322612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884821	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884960	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884822	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884786	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

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: P322705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884885	Total-P	97.6	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884827	O-Phosphate-P	96.0	97.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P322612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884821	Organic Carbon	94.8	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884815	Turbidity	0.388	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884821	Ammonia-N	0.526	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884823	Kjeldahl Nitrogen	0.559	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884960	Kjeldahl Nitrogen	0.241	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884822	NO2NO3-N	0.499	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884786	Total-P	0.101	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884885	Total-P	10.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884827	O-Phosphate-P	1.86	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884815	Color (true)	2.75	Sample	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P322612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884821	Organic Carbon	0.173	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: SM 2120 B
Run ID: A75477
Included Lab Sample IDs: 1884815, 1884816, 1884817, 1884818, 1884819, 1884820

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75479
Included Lab Sample IDs: 1884827, 1884828, 1884829, 1884830, 1884831, 1884832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.2	P/P	90 - 110
O-Phosphate-P	99.7	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75479

Included Lab Sample IDs: 1884827, 1884828, 1884829, 1884830, 1884831, 1884832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75482

Included Lab Sample IDs: 1884815, 1884816, 1884817, 1884818, 1884819, 1884820

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75505

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825, 1884826

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

Reference Method: SM 5310 B-00

Run ID: A75508

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825, 1884826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75553

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825, 1884826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75555

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	97.6	P/P	90 - 110
Kjeldahl Nitrogen	96.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75568

Included Lab Sample IDs: 1884826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75582

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825, 1884826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75582

Included Lab Sample IDs: 1884821, 1884822, 1884823, 1884824, 1884825, 1884826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	103	P/P	90 - 110
Total-P	101	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.388	
EPA 350.1 Rev. 2.0	Ammonia-N	102	104 103			0.526
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102				0.559
	Kjeldahl Nitrogen	104	103 103			0.241
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0 98.5			0.499
EPA 365.1 Rev. 2.0	Total-P	105	102 103			0.101
	Total-P	110	97.6 110			10.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	96.0 97.8			1.86
SM 2120 B	Color (true)				2.75	
SM 5310 B-00	Organic Carbon	94.9	94.8 95.2			0.173

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1884815, 1884816, 1884817, 1884818, 1884819, 1884820
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1884827, 1884828, 1884829, 1884830, 1884831, 1884832
SM 2120 B / E31780	True Color measured at 450 nm	1884815, 1884816, 1884817, 1884818, 1884819, 1884820
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1884815, 1884816, 1884817, 1884818, 1884819, 1884820
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1884821, 1884822, 1884823, 1884824, 1884825, 1884826

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	03/30/2017			03/30/2017 15:54	Blanca Fach	1884815, 1884816, 1884817, 1884818, 1884819, 1884820
EPA 350.1 Rev. 2.0	03/30/2017			03/31/2017	Julie Michelle Frank	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 351.2 Rev. 2.0	03/30/2017	04/03/2017	Adrian Shelby	04/04/2017	Joseph Suarez	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 353.2 Rev. 2.0	03/30/2017			04/04/2017	Beverly Y. Sanders	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 365.1 Rev. 2.0	03/30/2017	04/04/2017	Adrian Shelby	04/05/2017	Lipi Saha	1884821, 1884822, 1884823, 1884824, 1884825, 1884826
EPA 365.1 Rev. 2.0 dissolved	03/30/2017			03/30/2017 15:58	Anthony C. Onicha	1884827
	03/30/2017			03/30/2017 16:42	Anthony C. Onicha	1884828
	03/30/2017			03/30/2017 16:43	Anthony C. Onicha	1884829
	03/30/2017			03/30/2017 16:49	Anthony C. Onicha	1884830
	03/30/2017			03/30/2017 16:50	Anthony C. Onicha	1884831
	03/30/2017			03/30/2017 16:51	Anthony C. Onicha	1884832
SM 2120 B	03/30/2017			03/30/2017 19:37	Julie Michelle Frank	1884815
	03/30/2017			03/30/2017 19:38	Julie Michelle Frank	1884816, 1884817
	03/30/2017			03/30/2017 19:39	Julie Michelle Frank	1884818
	03/30/2017			03/30/2017 19:40	Julie Michelle Frank	1884819
	03/30/2017			03/30/2017 19:41	Julie Michelle Frank	1884820
SM 2540 D-97	03/30/2017			04/03/2017	Sima Feizi	1884815, 1884816, 1884817, 1884818, 1884819, 1884820
SM 5310 B-00	03/30/2017			03/31/2017	Christopher Armour	1884821, 1884822, 1884823, 1884824, 1884825, 1884826