

Chemical Analysis Report

NW-DIST-2018-07-03-02

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

Event Description: **WALTON LAKES RUN**

Request ID: **RQ-2018-07-02-41**

Customer: **NW-DIST**

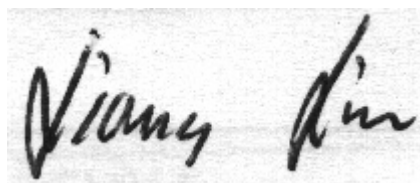
Project ID: **SMP**

Send Reports to:
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Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-JUL-2018 17:23

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Blue Pond (Center)

Collection Date/Time: 07/02/2018 11:50

Field ID: G3NW0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004673	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P347945	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P348518	
		Sulfate	0.97		mg SO4/L	P348524	
	SM 2120 B	Color (true)	3.1	I	PCU	P347937	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P348125	
	SM 2540 C-97	TDS	15	U	mg/L	P348461	
	SM 2540 D-97	TSS	2	I	mg/L	P348440	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P348126	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P348356	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P348143	
2004676	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P348201	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P348079	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P348374	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P347991	
2004679	EPA 365.1 Rev. 2.0 dissolved						

Ref. Method and Comment:

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

Sample Location: LAKE JUNIPER CENTER

Collection Date/Time: 07/02/2018 12:40

Field ID: G3NW0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004674	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P347945	
	EPA 300.0 Rev. 2.1	Chloride	5.6		mg Cl/L	P348518	
		Sulfate	0.72		mg SO4/L	P348524	
	SM 2120 B	Color (true)	19		PCU	P347937	
	SM 2320 B-97	Total Alkalinity	3.3		mg CaCO3/L	P348125	
	SM 2540 C-97	TDS	17	I	mg/L	P348461	
	SM 2540 D-97	TSS	2	I	mg/L	P348440	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P348126	
2004677	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P348356	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P348143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P348201	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P348246	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P348374	
2004680	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347990	

Ref. Method and Comment:

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

Sample Location: Bear Lake (Center)

Collection Date/Time: 07/02/2018 14:20

Field ID: G4NW0361

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004675	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P347945	
	EPA 300.0 Rev. 2.1	Chloride	2.5		mg Cl/L	P348518	
		Sulfate	0.35	I	mg SO4/L	P348524	
	SM 2120 B	Color (true)	24		PCU	P347937	
	SM 2320 B-97	Total Alkalinity	5.7		mg CaCO3/L	P348125	
	SM 2540 C-97	TDS	21	I	mg/L	P348462	
	SM 2540 D-97	TSS	3	I	mg/L	P348441	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P348126	
2004678	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P348478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P348143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P348201	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P348246	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P348454	
2004681	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347990	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347945

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348478

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348143

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348246

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: P347990

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347991

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

Reference Method: SM 2120 B
Batch ID: P347937

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P348125

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P348461

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P348462

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P348440

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P348441

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P348374

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

Reference Method: SM 5310 B-00
Batch ID: P348454

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348478

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348143

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348246

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347991

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

Reference Method: SM 2120 B
Batch ID: P347937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P348125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348374

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P348454

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004634	Chloride	90.7	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004634	Sulfate	91.0	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004651	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004678	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004678	Kjeldahl Nitrogen	109	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004593	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004593	Total-P	100	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004834	Total-P	92.2	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004638	O-Phosphate-P	91.6	93.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004679	O-Phosphate-P	95.3	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004538	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004267	Organic Carbon	97.3	98.8	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P348454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004540	Organic Carbon	97.0	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Turbidity	3.32	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Chloride	5.78	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Sulfate	7.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004651	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004678	Ammonia-N	0.514	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004678	Kjeldahl Nitrogen	4.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004593	NO2NO3-N	0.240	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004593	Total-P	4.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004834	Total-P	4.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004638	O-Phosphate-P	1.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004679	O-Phosphate-P	2.18	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004650	Color (true)	1.87	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P348125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Total Alkalinity	0.252	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P348461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004591	TDS	7.58	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P348462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004710	TDS	4.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Fluoride	0.0	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P348374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004267	Organic Carbon	0.804	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P348454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004540	Organic Carbon	0.735	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: A85012

Included Lab Sample IDs: 2004673, 2004674, 2004675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A85014

Included Lab Sample IDs: 2004673, 2004674, 2004675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A85036

Included Lab Sample IDs: 2004679, 2004680, 2004681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.3	94.0	P/P	90 - 110
O-Phosphate-P	95.8	95.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A85107

Included Lab Sample IDs: 2004673, 2004674, 2004675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A85107

Included Lab Sample IDs: 2004673, 2004674, 2004675

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85110

Included Lab Sample IDs: 2004676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A85130

Included Lab Sample IDs: 2004676, 2004677, 2004678

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A85140

Included Lab Sample IDs: 2004677, 2004678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A85187

Included Lab Sample IDs: 2004673, 2004674, 2004675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	97.5	P/P	90 - 110
Sulfate	95.3	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85188

Included Lab Sample IDs: 2004676, 2004677

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85189

Included Lab Sample IDs: 2004676, 2004677, 2004678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A85195

Included Lab Sample IDs: 2004676, 2004677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A85235

Included Lab Sample IDs: 2004678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A85243

Included Lab Sample IDs: 2004678

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	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					3.32	
EPA 300.0 Rev. 2.1	Chloride	94.2	90.7	97.5			5.78
	Sulfate	93.6	91.0	97.8			7.14
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	100			1.05
	Ammonia-N	104	101	100			0.514
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	109	102			4.70
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	102			0.240
EPA 365.1 Rev. 2.0	Total-P	98.8	100	95.4			4.11
	Total-P	94.0	92.2	96.8			4.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	91.6	93.1			1.45
	O-Phosphate-P	97.2	95.3	97.4			2.18
SM 2120 B	Color (true)	99.2				1.87	
SM 2320 B-97	Total Alkalinity	104				0.252	
SM 2540 C-97	TDS					7.58	
	TDS					4.26	
SM 4500 F-C-97	Fluoride	99.3	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	97.0	97.3	98.8			0.804
	Organic Carbon	97.4	97.0	97.7			0.735

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2004673, 2004674, 2004675
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2004673, 2004674, 2004675
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2004673, 2004674, 2004675
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2004676, 2004677, 2004678
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2004676, 2004677, 2004678
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2004676, 2004677, 2004678
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2004676, 2004677, 2004678
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2004679, 2004680, 2004681
SM 2120 B / E31780	True Color measured at 450 nm	2004673, 2004674, 2004675
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2004673, 2004674, 2004675
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2004673, 2004674, 2004675
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2004673, 2004674, 2004675
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2004673, 2004674, 2004675
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2004676, 2004677, 2004678

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	07/03/2018			07/03/2018 14:00	William L. Brown IV	2004673, 2004674, 2004675
EPA 300.0 Rev. 2.1	07/03/2018			07/11/2018 18:12	Lipi Saha	2004673
	07/03/2018			07/11/2018 18:24	Lipi Saha	2004674
	07/03/2018			07/11/2018 18:36	Lipi Saha	2004675
EPA 350.1 Rev. 2.0	07/03/2018			07/12/2018 12:37	Ping Hua	2004676
	07/03/2018			07/12/2018 12:38	Ping Hua	2004677
	07/03/2018			07/13/2018 10:39	Ping Hua	2004678
EPA 351.2 Rev. 2.0	07/03/2018	07/10/2018 15:30	Adrian Shelby	07/12/2018 15:02	Joseph Suarez	2004676
	07/03/2018	07/10/2018 15:30	Adrian Shelby	07/12/2018 15:04	Joseph Suarez	2004677
	07/03/2018	07/10/2018 15:30	Adrian Shelby	07/12/2018 15:05	Joseph Suarez	2004678
EPA 353.2 Rev. 2.0	07/03/2018			07/09/2018 13:35	Lauren Bottorf	2004676
	07/03/2018			07/09/2018 13:37	Lauren Bottorf	2004677
	07/03/2018			07/09/2018 13:38	Lauren Bottorf	2004678
EPA 365.1 Rev. 2.0	07/03/2018	07/09/2018 12:30	Lipi Saha	07/10/2018 12:08	Beverly Y. Sanders	2004676
	07/03/2018	07/10/2018 13:00	Sima Feizi	07/11/2018 12:19	Beverly Y. Sanders	2004677
	07/03/2018	07/10/2018 13:00	Sima Feizi	07/11/2018 12:20	Beverly Y. Sanders	2004678
EPA 365.1 Rev. 2.0 dissolved	07/03/2018			07/03/2018 17:03	Megan Treadwell	2004679
	07/03/2018			07/03/2018 17:30	Megan Treadwell	2004680
	07/03/2018			07/03/2018 17:31	Megan Treadwell	2004681
SM 2120 B	07/03/2018			07/03/2018 16:22	Tanya Welborn	2004673, 2004674
	07/03/2018			07/03/2018 16:23	Tanya Welborn	2004675
SM 2320 B-97	07/03/2018			07/10/2018 01:53	Dale L. Simmons	2004673
	07/03/2018			07/10/2018 02:05	Dale L. Simmons	2004674
	07/03/2018			07/10/2018 02:16	Dale L. Simmons	2004675
SM 2540 C-97	07/03/2018			07/05/2018 16:21	Yijie Li	2004673, 2004674, 2004675
SM 2540 D-97	07/03/2018			07/05/2018 16:21	Yijie Li	2004673, 2004674, 2004675
SM 4500 F-C-97	07/03/2018			07/10/2018 01:53	Dale L. Simmons	2004673
	07/03/2018			07/10/2018 02:05	Dale L. Simmons	2004674
	07/03/2018			07/10/2018 02:16	Dale L. Simmons	2004675
SM 5310 B-00	07/03/2018			07/12/2018 08:51	Megan Treadwell	2004676
	07/03/2018			07/12/2018 09:38	Megan Treadwell	2004677
	07/03/2018			07/12/2018 23:14	Megan Treadwell	2004678