

Chemical Analysis Report

NE-DIST-2018-06-21-01

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

Event Description: **Interlachen 2**
Request ID: **RQ-2018-06-04-32**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 12-JUL-2018 13:29



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: SOUTH BULL POND CENTER

Collection Date/Time: 06/20/2018 10:00

Field ID: G1NE0861

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002675	EPA 180.1 Rev. 2.0	Turbidity	1.5	A	NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P347633	
		Sulfate	2.4		mg SO4/L	P347636	
	SM 2120 B	Color (true)	240		PCU	P347280	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	65		mg/L	P347650	
	SM 2540 D-97	TSS	2	I	mg/L	P347563	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P347847	
2002680	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P347762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P348017	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347518	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P347712	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P347794	
2002685	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P347289	

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: COWPEN LAKE CENTER

Collection Date/Time: 06/20/2018 10:40

Field ID: 20020053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002676	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P347633	
		Sulfate	3.0		mg SO4/L	P347636	
	SM 2120 B	Color (true)	13		PCU	P347280	
	SM 2320 B-97	Total Alkalinity	2.1	I	mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	33		mg/L	P347650	
	SM 2540 D-97	TSS	2	I	mg/L	P347563	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P347847	
2002681	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P347762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347518	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P347712	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P347794	
2002686	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347289	

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 FANNY CENTER

Collection Date/Time: 06/20/2018 11:20

Field ID: 20020100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002677	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P347633	
		Sulfate	7.5		mg SO4/L	P347636	
	SM 2120 B	Color (true)	27		PCU	P347280	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	46		mg/L	P347650	
	SM 2540 D-97	TSS	4	I	mg/L	P347563	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347847	
2002682	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P347762	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P347518	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P347712	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P347794	
2002687	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347289	

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: GILLIS POND CENTER

Collection Date/Time: 06/20/2018 11:40

Field ID: G1NE0863

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002678	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P347633	
		Sulfate	2.6		mg SO4/L	P347636	
	SM 2120 B	Color (true)	210		PCU	P347281	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	48		mg/L	P347650	
	SM 2540 D-97	TSS	2	U	mg/L	P347563	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347847	
2002683	EPA 350.1 Rev. 2.0	Ammonia-N	1.3		mg N/L	P347763	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.4		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P347518	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P347712	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P347794	
2002688	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347289	

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: GALILEE LAKE CENTER

Collection Date/Time: 06/20/2018 12:15

Field ID: G1NE0870

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002679	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P347296	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P347633	
		Sulfate	3.1		mg SO4/L	P347636	
	SM 2120 B	Color (true)	19		PCU	P347281	
	SM 2320 B-97	Total Alkalinity	1.7	I	mg CaCO3/L	P347843	
	SM 2540 C-97	TDS	32		mg/L	P347650	
	SM 2540 D-97	TSS	2	U	mg/L	P347564	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P347847	
2002684	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P347763	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P348018	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347518	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P347712	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P347794	
2002689	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347289	

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: P347296

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347762

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347763

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348017

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347518

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347712

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: P347289

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

Reference Method: SM 2120 B
Batch ID: P347280

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P347281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P347843

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

Reference Method: SM 2540 C-97
Batch ID: P347650

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347563

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347564

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347794

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: P347633

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347762

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347763

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348017

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347518

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: P347712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P347843

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002586	Chloride	102		P	90 - 110
2002678	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002586	Sulfate	102		P	90 - 110
2002678	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002680	Ammonia-N	98.1	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002684	Ammonia-N	96.8	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002589	Kjeldahl Nitrogen	91.9	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002712	Kjeldahl Nitrogen	106	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002680	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002682	Total-P	91.3	91.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002472	O-Phosphate-P	94.0	95.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002468	Fluoride	96.8	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002588	Organic Carbon	98.3	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002675	Turbidity	0.683	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002586	Chloride	2.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002586	Sulfate	1.33	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002680	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002684	Ammonia-N	2.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002589	Kjeldahl Nitrogen	1.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002712	Kjeldahl Nitrogen	5.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002680	NO2NO3-N	1.00	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002682	Total-P	0.0267	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002472	O-Phosphate-P	1.69	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002587	Color (true)	0.750	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002711	Color (true)	4.08	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002468	Total Alkalinity	1.01	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002609	TDS	0.289	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002468	Fluoride	0.472	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P347794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002588	Organic Carbon	0.673	Spike	P	0 - 20

Quality Assurance Report

Precision

* 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: A84757

Included Lab Sample IDs: 2002675, 2002676, 2002677, 2002678, 2002679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	102	103	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84758

Included Lab Sample IDs: 2002685, 2002686, 2002687, 2002688, 2002689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.8	P/P	90 - 110
O-Phosphate-P	99.5	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84760

Included Lab Sample IDs: 2002675, 2002676, 2002677, 2002678, 2002679

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84842

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84847

Included Lab Sample IDs: 2002675, 2002676, 2002677, 2002678, 2002679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.9	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84937

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

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

Reference Method: SM 5310 B-00

Run ID: A84954

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

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

Reference Method: SM 5310 B-00

Run ID: A84954

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	95.8	P/P	90 - 110
Organic Carbon	96.8	96.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A84969

Included Lab Sample IDs: 2002675, 2002676, 2002677, 2002678, 2002679

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84969

Included Lab Sample IDs: 2002675, 2002676, 2002677, 2002678, 2002679

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84978

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A85079

Included Lab Sample IDs: 2002680, 2002681, 2002682, 2002683, 2002684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.0	93.0	P/P	90 - 110
Kjeldahl Nitrogen	95.5	91.0	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	MS
EPA 180.1 Rev. 2.0	Turbidity				0.683	
EPA 300.0 Rev. 2.1	Chloride	100	102	99.7	2.15	
	Sulfate	102	102	99.9	1.33	
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	98.1	96.6		1.05
	Ammonia-N	99.2	96.8	99.6		2.71
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	91.9	94.2		1.80
	Kjeldahl Nitrogen	93.1	106	98.8		5.20
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	99.5		1.00
EPA 365.1 Rev. 2.0	Total-P	94.9	91.3	91.3		0.0267
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	94.0	95.6		1.69
SM 2120 B	Color (true)				0.750	
	Color (true)				4.08	
SM 2320 B-97	Total Alkalinity	103			1.01	
SM 2540 C-97	TDS				0.289	
SM 4500 F-C-97	Fluoride	98.8	96.8	97.3		0.472
SM 5310 B-00	Organic Carbon	97.5	98.3	99.2		0.673

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2002675, 2002676, 2002677, 2002678, 2002679
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2002675, 2002676, 2002677, 2002678, 2002679
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2002675, 2002676, 2002677, 2002678, 2002679
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2002680, 2002681, 2002682, 2002683, 2002684
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2002680, 2002681, 2002682, 2002683, 2002684
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2002680, 2002681, 2002682, 2002683, 2002684
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2002680, 2002681, 2002682, 2002683, 2002684
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2002685, 2002686, 2002687, 2002688, 2002689
SM 2120 B / E31780	True Color measured at 450 nm	2002675, 2002676, 2002677, 2002678, 2002679
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2002675, 2002676, 2002677, 2002678, 2002679
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2002675, 2002676, 2002677, 2002678, 2002679
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2002675, 2002676, 2002677, 2002678, 2002679
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2002675, 2002676, 2002677, 2002678, 2002679
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2002680, 2002681, 2002682, 2002683, 2002684

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	06/21/2018			06/21/2018 17:00	William L. Brown IV	2002675, 2002676, 2002677, 2002678, 2002679
EPA 300.0 Rev. 2.1	06/21/2018			06/26/2018 18:49	Lipi Saha	2002678
	06/21/2018			06/26/2018 20:37	Lipi Saha	2002675
	06/21/2018			06/26/2018 20:49	Lipi Saha	2002676
	06/21/2018			06/26/2018 21:01	Lipi Saha	2002677
	06/21/2018			06/26/2018 21:13	Lipi Saha	2002679
EPA 350.1 Rev. 2.0	06/21/2018			06/29/2018 10:34	Julia Storbeck	2002680
	06/21/2018			06/29/2018 10:55	Julia Storbeck	2002681
	06/21/2018			06/29/2018 10:57	Julia Storbeck	2002682
	06/21/2018			06/29/2018 11:07	Julia Storbeck	2002684
	06/21/2018			06/29/2018 11:12	Julia Storbeck	2002683
EPA 351.2 Rev. 2.0	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:19	Joseph Suarez	2002680
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:24	Joseph Suarez	2002681
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:25	Joseph Suarez	2002682
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:30	Joseph Suarez	2002683
	06/21/2018	07/06/2018 11:15	Adrian Shelby	07/09/2018 11:31	Joseph Suarez	2002684
EPA 353.2 Rev. 2.0	06/21/2018			06/26/2018 14:32	Lauren Bottorf	2002680
	06/21/2018			06/26/2018 14:38	Lauren Bottorf	2002681
	06/21/2018			06/26/2018 14:39	Lauren Bottorf	2002682
	06/21/2018			06/26/2018 14:40	Lauren Bottorf	2002683
	06/21/2018			06/26/2018 14:41	Lauren Bottorf	2002684
EPA 365.1 Rev. 2.0	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 16:54	Beverly Y. Sanders	2002680
	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 16:55	Beverly Y. Sanders	2002681
	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 16:56	Beverly Y. Sanders	2002682
	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 16:57	Beverly Y. Sanders	2002683
	06/21/2018	06/28/2018 11:45	Sima Feizi	07/02/2018 16:58	Beverly Y. Sanders	2002684
EPA 365.1 Rev. 2.0 dissolved	06/21/2018			06/21/2018 15:47	Megan Treadwell	2002685
	06/21/2018			06/21/2018 15:48	Megan Treadwell	2002686
	06/21/2018			06/21/2018 15:49	Megan Treadwell	2002687
	06/21/2018			06/21/2018 15:54	Megan Treadwell	2002688
	06/21/2018			06/21/2018 15:55	Megan Treadwell	2002689
SM 2120 B	06/21/2018			06/21/2018 15:18	Tanya Welborn	2002676
	06/21/2018			06/21/2018 15:19	Tanya Welborn	2002677
	06/21/2018			06/21/2018 15:23	Tanya Welborn	2002679
	06/21/2018			06/21/2018 15:39	Tanya Welborn	2002675
	06/21/2018			06/21/2018 15:44	Tanya Welborn	2002678
SM 2320 B-97	06/21/2018			07/02/2018 04:31	Dale L. Simmons	2002675
	06/21/2018			07/02/2018 05:09	Dale L. Simmons	2002676
	06/21/2018			07/02/2018 05:18	Dale L. Simmons	2002677

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	06/21/2018			07/02/2018 05:25	Dale L. Simmons	2002678
	06/21/2018			07/02/2018 05:36	Dale L. Simmons	2002679
SM 2540 C-97	06/21/2018			06/22/2018 15:16	William L. Brown IV	2002675, 2002676, 2002677, 2002678, 2002679
SM 2540 D-97	06/21/2018			06/22/2018 15:16	William L. Brown IV	2002675, 2002676, 2002677, 2002678, 2002679
SM 4500 F-C-97	06/21/2018			07/02/2018 04:31	Dale L. Simmons	2002675
	06/21/2018			07/02/2018 05:09	Dale L. Simmons	2002676
	06/21/2018			07/02/2018 05:18	Dale L. Simmons	2002677
	06/21/2018			07/02/2018 05:25	Dale L. Simmons	2002678
	06/21/2018			07/02/2018 05:36	Dale L. Simmons	2002679
SM 5310 B-00	06/21/2018			06/29/2018 20:37	Megan Treadwell	2002680
	06/21/2018			06/29/2018 20:52	Megan Treadwell	2002681
	06/21/2018			06/29/2018 21:35	Megan Treadwell	2002682
	06/21/2018			06/29/2018 21:55	Megan Treadwell	2002683
	06/21/2018			06/29/2018 22:10	Megan Treadwell	2002684