Chemical Analysis Report

NE-DIST-2017-05-05-01

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

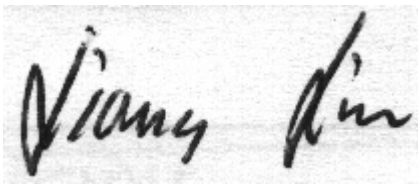
Event Description: **Interlachen 2**
Request ID: **RQ-2017-04-17-11**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
NE ROC
8800 Baymeadows Way W
Suite 100
Jacksonville, FL 32256-7577
Attn: Nicole Frederick

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 01-JUN-2017 13:41



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: Fanny Lake **Collection Date/Time: 05/04/2017 09:30**

Field ID: G1NE007405042017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896912	EPA 180.1 Rev. 2.0	Turbidity	0.35		NTU	P324726	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P325191	
		Sulfate	13		mg SO4/L	P325188	
	SM 2120 B	Color (true)	3.3	I	PCU	P324718	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P325405	
	SM 2540 C-97	TDS	62		mg/L	P325340	
	SM 2540 D-97	TSS	3	I	mg/L	P325324	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P325406	
1896916	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P324812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324999	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P324811	
	SM 5310 B-00	Organic Carbon	2.0		mg C/L	P324947	
1896920	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324729	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Gillis Pond **Collection Date/Time: 05/04/2017 09:55**

Field ID: G1NE086305042017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896913	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P324726	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P325191	
		Sulfate	7.1		mg SO4/L	P325188	
	SM 2120 B	Color (true)	2.5	U	PCU	P324718	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P325405	
	SM 2540 C-97	TDS	36		mg/L	P325340	
	SM 2540 D-97	TSS	3	I	mg/L	P325324	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P325406	
1896917	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P324812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324999	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P324841	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P324947	
1896921	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P324731	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Cowpen Lake **Collection Date/Time: 05/04/2017 10:35**

Field ID: G1NE003905042017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896914	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P324726	

Field ID: G1NE003905042017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896914	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P325191	
		Sulfate	4.6		mg SO4/L	P325188	
	SM 2120 B	Color (true)	10		PCU	P324718	
	SM 2320 B-97	Total Alkalinity	2.6		mg CaCO3/L	P325405	
	SM 2540 C-97	TDS	38		mg/L	P325340	
	SM 2540 D-97	TSS	3	I	mg/L	P325324	
	SM 4500 F-C-97	Fluoride	0.055	I	mg F/L	P325406	
1896918	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P324812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324999	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P324841	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P324947	
1896922	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324731	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Galilee Lake **Collection Date/Time: 05/04/2017 11:10**

Field ID: G1NE087005042017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896915	EPA 180.1 Rev. 2.0	Turbidity	5.6	A	NTU	P324726	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P325191	
		Sulfate	6.2		mg SO4/L	P325188	
	SM 2120 B	Color (true)	18		PCU	P324718	
	SM 2320 B-97	Total Alkalinity	0.86	I	mg CaCO3/L	P325405	
	SM 2540 C-97	TDS	39		mg/L	P325340	
	SM 2540 D-97	TSS	5	I	mg/L	P325324	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P325406	
1896919	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P324812	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P324999	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P324841	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P324947	
1896923	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324731	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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: P324726

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325188

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325191

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324812

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324999

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324841

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324729

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324731

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: P324718

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325405

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

Reference Method: SM 2540 C-97
Batch ID: P325340

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325324

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324947

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: P325188

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325191

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324812

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324812

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324999

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324729

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P325405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P324947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896912	Sulfate	94.4		P	90 - 110
1896955	Sulfate	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896912	Chloride	98.2		P	90 - 110
1896955	Chloride	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896834	Ammonia-N	97.4	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896916	Kjeldahl Nitrogen	103	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896835	NO2NO3-N	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896797	Total-P	101	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896957	Total-P	100	97.1	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896920	O-Phosphate-P	95.1	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896961	O-Phosphate-P	95.9	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896956	Fluoride	102	104	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896834	Organic Carbon	92.5	92.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896915	Turbidity	0.892	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896955	Chloride	0.214	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896834	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896916	Kjeldahl Nitrogen	3.20	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896835	NO2NO3-N	3.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896797	Total-P	2.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896957	Total-P	2.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896920	O-Phosphate-P	0.524	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896961	O-Phosphate-P	0.831	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P324718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896881	Color (true)	0.538	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P325405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896956	Total Alkalinity	0.801	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896793	TDS	1.44	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P325406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896956	Fluoride	1.61	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P324947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896834	Organic Carbon	0.158	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: A76218
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76221
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76222
Included Lab Sample IDs: 1896920, 1896921, 1896922, 1896923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.5	P/P	90 - 110
O-Phosphate-P	97.9	96.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76241
Included Lab Sample IDs: 1896916, 1896917, 1896918, 1896919

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A76269
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A76269
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	96.7	96.9	P/P	90 - 110
Sulfate	96.9	97.7	P/P	90 - 110
Sulfate	97.7	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A76286
Included Lab Sample IDs: 1896916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A76303
Included Lab Sample IDs: 1896916, 1896917, 1896918, 1896919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.2	93.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A76314
Included Lab Sample IDs: 1896916, 1896917, 1896918, 1896919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A76370
Included Lab Sample IDs: 1896917, 1896918, 1896919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A76416
Included Lab Sample IDs: 1896916, 1896917, 1896918, 1896919

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

Reference Method: SM 2320 B-97
Run ID: A76469
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A76469
Included Lab Sample IDs: 1896912, 1896913, 1896914, 1896915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.4	99.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.892	
EPA 300.0 Rev. 2.1	Chloride	101	95.4	98.2		0.214	
	Sulfate	95.7	94.3	94.4			
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	97.4	98.8			1.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	103	107			3.20
EPA 353.2 Rev. 2.0	NO2NO3-N	106	101	104			3.41
EPA 365.1 Rev. 2.0	Total-P	97.6	101	105			2.58
	Total-P	107	100	97.1			2.93
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	95.1	95.6			0.524
	O-Phosphate-P	96.8	95.9	96.7			0.831
SM 2120 B	Color (true)					0.538	
SM 2320 B-97	Total Alkalinity	103				0.801	
SM 2540 C-97	TDS					1.44	
SM 4500 F-C-97	Fluoride	96.8	102	104			1.61
SM 5310 B-00	Organic Carbon	93.1	92.5	92.3			0.158

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1896912, 1896913, 1896914, 1896915
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1896912, 1896913, 1896914, 1896915
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1896912, 1896913, 1896914, 1896915
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1896916, 1896917, 1896918, 1896919
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1896916, 1896917, 1896918, 1896919
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1896916, 1896917, 1896918, 1896919
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1896916, 1896917, 1896918, 1896919
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1896920, 1896921, 1896922, 1896923
SM 2120 B / E31780	True Color measured at 450 nm	1896912, 1896913, 1896914, 1896915
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1896912, 1896913, 1896914, 1896915
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1896912, 1896913, 1896914, 1896915
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1896912, 1896913, 1896914, 1896915
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1896912, 1896913, 1896914, 1896915

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1896916, 1896917, 1896918, 1896919

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	05/05/2017			05/05/2017 15:29	Sima Feizi	1896912, 1896913, 1896914, 1896915
EPA 300.0 Rev. 2.1	05/05/2017			05/11/2017	Ping Hua	1896912, 1896913, 1896914, 1896915
EPA 350.1 Rev. 2.0	05/05/2017			05/08/2017	Julia Storbeck	1896916, 1896917, 1896918, 1896919
EPA 351.2 Rev. 2.0	05/05/2017	05/11/2017	Adrian Shelby	05/15/2017	Joseph Suarez	1896916, 1896917, 1896918, 1896919
EPA 353.2 Rev. 2.0	05/05/2017			05/10/2017	Beverly Y. Sanders	1896916, 1896917, 1896918, 1896919
EPA 365.1 Rev. 2.0	05/05/2017	05/08/2017	Vijayalakshmi Reddy	05/09/2017	Lipi Saha	1896916
	05/05/2017	05/09/2017	Adrian Shelby	05/10/2017	Lipi Saha	1896917, 1896918, 1896919
EPA 365.1 Rev. 2.0 dissolved	05/05/2017			05/05/2017 16:21	Anthony C. Onicha	1896920
	05/05/2017			05/05/2017 16:58	Anthony C. Onicha	1896921
	05/05/2017			05/05/2017 16:59	Anthony C. Onicha	1896922
	05/05/2017			05/05/2017 17:00	Anthony C. Onicha	1896923
SM 2120 B	05/05/2017			05/05/2017 15:06	Julia Storbeck	1896912
	05/05/2017			05/05/2017 15:07	Julia Storbeck	1896913
	05/05/2017			05/05/2017 15:08	Julia Storbeck	1896914, 1896915
SM 2320 B-97	05/05/2017			05/16/2017	Dale L. Simmons	1896912, 1896913, 1896914, 1896915
SM 2540 C-97	05/05/2017			05/10/2017	Yijie Li	1896912, 1896913, 1896914, 1896915
SM 2540 D-97	05/05/2017			05/10/2017	Yijie Li	1896912, 1896913, 1896914, 1896915
SM 4500 F-C-97	05/05/2017			05/16/2017	Dale L. Simmons	1896912, 1896913, 1896914, 1896915
SM 5310 B-00	05/05/2017			05/09/2017	Christopher Armour	1896916, 1896917, 1896918, 1896919