

Chemical Analysis Report

SW-DIST-2016-05-18-01

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

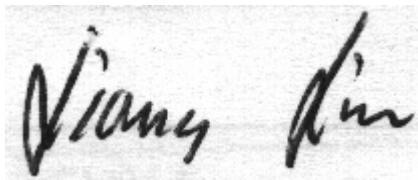
Event Description: **1329G**
Request ID: **RQ-2016-05-16-43**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Stephen Clingerman

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

Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUN-2016 15:05

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: G4SW0099

Collection Date/Time: 05/17/2016 09:10

Field ID: G4SW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800005	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P304581	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P305100	
		Sulfate	0.38	I	mg SO4/L	P305103	
	SM 2120 B	Color (true)	590		PCU	P304561	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	124		mg/L	P305235	
	SM 2540 D-97	TSS	7	I	mg/L	P305154	
1800008	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P304844	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P305203	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P305084	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304716	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P305547	
1800011	SM 5310 B-00	Organic Carbon	57		mg C/L	P305454	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P304539	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: The result was confirmed on 06/03/2016.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/01/2016.

Sample Location: G4SW0099

Collection Date/Time: 05/17/2016 09:15

Field ID: DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800006	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P304581	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P305100	
		Sulfate	0.28	I	mg SO4/L	P305103	
	SM 2120 B	Color (true)	600		PCU	P304561	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	135		mg/L	P305235	
	SM 2540 D-97	TSS	8	I	mg/L	P305154	
1800009	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P304844	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P305203	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.1		mg N/L	P305084	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304716	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P305547	
1800012	SM 5310 B-00	Organic Carbon	57		mg C/L	P305454	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P304539	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: The result was confirmed on 06/03/2016.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/01/2016.

Sample Location: BLANK

Collection Date/Time: 05/17/2016 13:45

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800007	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P304582	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P305100	
		Sulfate	0.20	U	mg SO4/L	P305103	
	SM 2120 B	Color (true)	2.5	U	PCU	P304561	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	15	U	mg/L	P305233	
	SM 2540 D-97	TSS	2	U	mg/L	P305152	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P304844	
1800010	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305203	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P305084	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304716	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P305323	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P305454	
1800013	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P304539	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P304581

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P304582

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P305100

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P305103

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P305203

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305084

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304716

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305323

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305547

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304539

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

Reference Method: SM 2120 B
Batch ID: P304561

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P304841

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

Reference Method: SM 2540 C-97
Batch ID: P305233

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P305235

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P305152

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P305154

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P304844

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P305454

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: P305100

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P305103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P305203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P305084

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: P304716

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P304716

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P305323

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P305547

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P304539

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

Reference Method: SM 2320 B-97
 Batch ID: P304841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P304844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P305454

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P305100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800093	Chloride	98.9		P	90 - 110
1800254	Chloride	99.3		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800093	Sulfate	91.3		P	90 - 110
1800254	Sulfate	97.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800038	Kjeldahl Nitrogen	114	105	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800038	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800039	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1801307	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799750	O-Phosphate-P	97.6	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P304844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799498	Fluoride	102	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P305454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1799731	Organic Carbon	92.7	94.9	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P304581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799777	Turbidity	0.851	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P304582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800092	Turbidity	1.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800093	Chloride	0.181	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P305103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800093	Sulfate	4.56	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799811	Ammonia-N	0.158	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800038	Kjeldahl Nitrogen	5.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800038	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800039	Total-P	2.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1801307	Total-P	2.33	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799750	O-Phosphate-P	1.63	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P304561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799877	Color (true)	2.48	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P304841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799498	Total Alkalinity	0.184	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P305233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799527	TDS	5.95	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P305235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800091	TDS	1.66	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P304844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799498	Fluoride	1.01	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P305454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1799731	Organic Carbon	1.34	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: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69552
Included Lab Sample IDs: 1800011, 1800012, 1800013

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

Reference Method: SM 2120 B
Run ID: A69558
Included Lab Sample IDs: 1800005, 1800006, 1800007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	100	99.3	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69569
Included Lab Sample IDs: 1800005, 1800006, 1800007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69600
Included Lab Sample IDs: 1800008, 1800009, 1800010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69640
Included Lab Sample IDs: 1800005, 1800006, 1800007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	99.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A69640
Included Lab Sample IDs: 1800005, 1800006, 1800007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69676
Included Lab Sample IDs: 1800005, 1800006, 1800007

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69676

Included Lab Sample IDs: 1800005, 1800006, 1800007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	97.4	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69737

Included Lab Sample IDs: 1800008, 1800009, 1800010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69772

Included Lab Sample IDs: 1800008, 1800009, 1800010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	99.6	P/P	90 - 110
Kjeldahl Nitrogen	99.2	97.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A69807

Included Lab Sample IDs: 1800008, 1800009, 1800010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69815

Included Lab Sample IDs: 1800010

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69885

Included Lab Sample IDs: 1800008, 1800009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	102	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				0.851	
	Turbidity				1.50	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 300.0 Rev. 2.1	Chloride	99.8	98.9	99.3		0.181	
	Sulfate	97.3	91.3	97.9		4.56	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7					0.158
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	114	105			5.76
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	99.0				0.0
EPA 365.1 Rev. 2.0	Total-P	103	103	105			2.49
	Total-P	105	104	107			2.33
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	97.6	99.2			1.63
SM 2120 B	Color (true)					2.48	
SM 2320 B-97	Total Alkalinity	102				0.184	
SM 2540 C-97	TDS					5.95	
	TDS					1.66	
SM 4500 F-C-97	Fluoride	99.5	102	101			1.01
SM 5310 B-00	Organic Carbon	95.6	92.7	94.9			1.34

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1800005, 1800006, 1800007
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1800005, 1800006, 1800007
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1800005, 1800006, 1800007
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1800008, 1800009, 1800010
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1800008, 1800009, 1800010
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1800008, 1800009, 1800010
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1800008, 1800009, 1800010
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1800011, 1800012, 1800013
SM 2120 B / E31780	True Color measured at 450 nm	1800005, 1800006, 1800007
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1800005, 1800006, 1800007
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1800005, 1800006, 1800007
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1800005, 1800006, 1800007
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1800005, 1800006, 1800007
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1800008, 1800009, 1800010

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	05/18/2016			05/18/2016 15:38	Sima Feizi	1800005, 1800006, 1800007
EPA 300.0 Rev. 2.1	05/18/2016			05/26/2016	Ping Hua	1800005, 1800006, 1800007
EPA 350.1 Rev. 2.0	05/18/2016			05/26/2016	Diana M. Turner	1800008, 1800009, 1800010
EPA 351.2 Rev. 2.0	05/18/2016	05/26/2016	Sofia Elnemr	05/31/2016	Christopher Armour	1800008, 1800009, 1800010
EPA 353.2 Rev. 2.0	05/18/2016			05/20/2016	Peter D. Kaus	1800008, 1800009, 1800010
EPA 365.1 Rev. 2.0	05/18/2016	05/31/2016	Vijayalakshmi Reddy	06/02/2016	Rochelle Y Jackson	1800010
	05/18/2016	06/03/2016	Vijayalakshmi Reddy	06/06/2016	Rochelle Y Jackson	1800008, 1800009
EPA 365.1 Rev. 2.0 dissolved	05/18/2016			05/18/2016 15:20	Julia Storbeck	1800013
	05/18/2016			05/18/2016 15:33	Julia Storbeck	1800011
	05/18/2016			05/18/2016 15:34	Julia Storbeck	1800012
SM 2120 B	05/18/2016			05/19/2016 00:06	Rochelle Y Jackson	1800007
	05/18/2016			05/19/2016 00:28	Rochelle Y Jackson	1800005
	05/18/2016			05/19/2016 00:29	Rochelle Y Jackson	1800006
SM 2320 B-97	05/18/2016			05/21/2016	Dale L. Simmons	1800005, 1800006, 1800007
SM 2540 C-97	05/18/2016			05/19/2016	Yijie Li	1800005, 1800006, 1800007
SM 2540 D-97	05/18/2016			05/19/2016	Yijie Li	1800005, 1800006, 1800007
SM 4500 F-C-97	05/18/2016			05/21/2016	Dale L. Simmons	1800005, 1800006, 1800007
SM 5310 B-00	05/18/2016			06/01/2016	Diana M. Turner	1800008, 1800009, 1800010