

Chemical Analysis Report

WQAP-2016-05-18-03

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

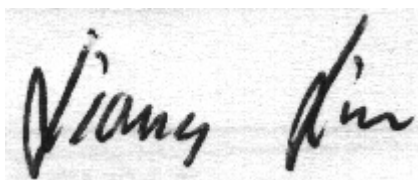
Event Description: **Sally Ward Spring, Eight Mile Pond, Godby Ditch and Black Creek**
Request ID: **RQ-2016-05-16-33**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Tallahassee, FL 32399-2400
Attn: Benjamin Ralys

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-JUN-2016 15:02

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: SALLY WARD SPRING AT WAKULLA PARK DR.

Collection Date/Time: 05/18/2016 09:55

Field ID: G1WA0021

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800091	EPA 180.1 Rev. 2.0	Turbidity	0.10		NTU	P304582	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P305100	
	SM 2120 B	Color (true)	2.5	U	PCU	P304607	
	SM 2320 B-97	Total Alkalinity	146		mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	182	Q	mg/L	P305710	
	SM 2540 D-97	TSS	2	I	mg/L	P305154	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P304844	
1800095	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305204	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	UJ	mg N/L	P305085	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.66		mg N/L	P304717	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P305323	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P305454	
1800099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P304543	

Ref. Method and Comment:

SM 2540 C-97: Sample reanalyzed out of holding time due to analytical difficulties.

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: Refer to the narrative for an explanation of QC Codes.

Sample Location: BLOCK CREEK UPSTREAM OF BLOXHAM CUTOFF

Collection Date/Time: 05/18/2016 09:20

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800092	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P304582	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P305100	
	SM 2120 B	Color (true)	520		PCU	P304607	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	115		mg/L	P305235	
	SM 2540 D-97	TSS	9	I	mg/L	P305154	
	SM 4500 F-C-97	Fluoride	0.035	I	mg F/L	P304844	
1800096	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P305204	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P305085	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304717	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P305324	
	SM 5310 B-00	Organic Carbon	35		mg C/L	P305454	
1800100	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P304543	

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.

Sample Location: EIGHT MILE POND MIDDLE

Collection Date/Time: 05/18/2016 10:45

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800093	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P304582	

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800093	EPA 300.0 Rev. 2.1	Chloride	3.6	A	mg Cl/L	P305100	
	SM 2120 B	Color (true)	81		PCU	P304607	
	SM 2320 B-97	Total Alkalinity	31		mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	59		mg/L	P305235	
	SM 2540 D-97	TSS	9	I	mg/L	P305154	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P304844	
1800097	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P305204	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P305085	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P304717	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P305324	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P305454	
1800101	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P304543	

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.

Sample Location: GODBY DRAINAGE DITCH AT VEGA DR.

Collection Date/Time: 05/18/2016 13:18

Field ID: G1WA0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1800094	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P304582	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P305100	
	SM 2120 B	Color (true)	11		PCU	P304607	
	SM 2320 B-97	Total Alkalinity	100		mg CaCO3/L	P304841	
	SM 2540 C-97	TDS	137		mg/L	P305235	
	SM 2540 D-97	TSS	3	I	mg/L	P305154	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P304844	
1800098	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P305204	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P305085	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P304717	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P305324	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P305454	
1800102	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.076		mg P/L	P304543	

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: P304582

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: P305100

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305204

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304717

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: P305323

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305324

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304543

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

Reference Method: SM 2120 B
Batch ID: P304607

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 CaCO ₃ /L

Quality Assurance Report Method Blank Results

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

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P305710

Component	Result	Code	Units
TDS	15	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 350.1 Rev. 2.0
Batch ID: P305204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304717

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: P305324

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	102		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 351.2 Rev. 2.0
Batch ID: P305085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800095	Kjeldahl Nitrogen	111	105	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800097	NO2NO3-N	99.2	101	P/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: P305324

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800098	Total-P	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1800048	O-Phosphate-P	97.6	99.8	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

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

Quality Assurance Report Precision

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 350.1 Rev. 2.0
Batch ID: P305204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800040	Ammonia-N	0.429	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800095	Kjeldahl Nitrogen	5.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800097	NO2NO3-N	1.34	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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800098	Total-P	0.916	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P304543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800048	O-Phosphate-P	2.03	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P304607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1800254	Color (true)	0.00751	Sample	P	0 - 20

Quality Assurance Report Precision

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: 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 2540 C-97
Batch ID: P305710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1802737	TDS	2.96	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

* 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: 1800099, 1800100, 1800101, 1800102

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69569
Included Lab Sample IDs: 1800091, 1800092, 1800093, 1800094

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69579

Included Lab Sample IDs: 1800091, 1800092, 1800093, 1800094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	98.6	P/P	90 - 115
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69600

Included Lab Sample IDs: 1800095, 1800096, 1800097, 1800098

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

Reference Method: SM 2320 B-97

Run ID: A69640

Included Lab Sample IDs: 1800091, 1800092, 1800093, 1800094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	99.9	P/P	90 - 110
Total Alkalinity	99.9	98.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69640

Included Lab Sample IDs: 1800091, 1800092, 1800093, 1800094

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A69676

Included Lab Sample IDs: 1800091, 1800092, 1800093, 1800094

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69737

Included Lab Sample IDs: 1800095, 1800096, 1800097, 1800098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69781

Included Lab Sample IDs: 1800095, 1800096, 1800097, 1800098

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69789

Included Lab Sample IDs: 1800096, 1800097, 1800098

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

Reference Method: SM 5310 B-00

Run ID: A69807

Included Lab Sample IDs: 1800095, 1800096, 1800097, 1800098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	96.5	P/P	90 - 110
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: 1800095

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.50	
EPA 300.0 Rev. 2.1	Chloride	99.8	98.9 99.3		0.181	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8				0.429
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	111 105			5.42
EPA 353.2 Rev. 2.0	NO2NO3-N	103	99.2 101			1.34
EPA 365.1 Rev. 2.0	Total-P	103	103 105			2.49
	Total-P	101	99.0 100			0.916
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.6 99.8			2.03
SM 2120 B	Color (true)				0.0075	
SM 2320 B-97	Total Alkalinity	102			0.184	
SM 2540 C-97	TDS				1.66	
	TDS				2.96	
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	1800091, 1800092, 1800093, 1800094
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1800091, 1800092, 1800093, 1800094

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1800095, 1800096, 1800097, 1800098
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1800095, 1800096, 1800097, 1800098
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1800095, 1800096, 1800097, 1800098
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1800095, 1800096, 1800097, 1800098
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1800099, 1800100, 1800101, 1800102
SM 2120 B / E31780	True Color measured at 450 nm	1800091, 1800092, 1800093, 1800094
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1800091, 1800092, 1800093, 1800094
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1800091, 1800092, 1800093, 1800094
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1800091, 1800092, 1800093, 1800094
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1800091, 1800092, 1800093, 1800094
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1800095, 1800096, 1800097, 1800098

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	1800091, 1800092, 1800093, 1800094
EPA 300.0 Rev. 2.1	05/18/2016			05/26/2016	Ping Hua	1800091, 1800092, 1800093, 1800094
EPA 350.1 Rev. 2.0	05/18/2016			05/26/2016	Diana M. Turner	1800095, 1800096, 1800097, 1800098
EPA 351.2 Rev. 2.0	05/18/2016	05/26/2016	Sofia Elnemr	06/01/2016	Virginia P. Brown	1800095, 1800096, 1800097, 1800098
EPA 353.2 Rev. 2.0	05/18/2016			05/20/2016	Peter D. Kaus	1800095, 1800096, 1800097, 1800098
EPA 365.1 Rev. 2.0	05/18/2016	05/31/2016	Vijayalakshmi Reddy	06/02/2016	Rochelle Y Jackson	1800095
	05/18/2016	06/01/2016	Vijayalakshmi Reddy	06/01/2016	Peter D. Kaus	1800096, 1800097, 1800098
EPA 365.1 Rev. 2.0 dissolved	05/18/2016			05/18/2016 15:49	Julia Storbeck	1800099, 1800100
	05/18/2016			05/18/2016 15:50	Julia Storbeck	1800101
	05/18/2016			05/18/2016 15:51	Julia Storbeck	1800102
SM 2120 B	05/18/2016			05/19/2016 13:45	Rochelle Y Jackson	1800091
	05/18/2016			05/19/2016 13:46	Rochelle Y Jackson	1800093
	05/18/2016			05/19/2016 13:47	Rochelle Y Jackson	1800094
	05/18/2016			05/19/2016 14:36	Rochelle Y Jackson	1800092
SM 2320 B-97	05/18/2016			05/21/2016	Dale L. Simmons	1800091, 1800092, 1800093, 1800094
SM 2540 C-97	05/18/2016			05/19/2016	Yijie Li	1800092, 1800093, 1800094
	05/18/2016			06/01/2016	Yijie Li	1800091
SM 2540 D-97	05/18/2016			05/19/2016	Yijie Li	1800091, 1800092, 1800093, 1800094
SM 4500 F-C-97	05/18/2016			05/21/2016	Dale L. Simmons	1800091, 1800092, 1800093, 1800094
SM 5310 B-00	05/18/2016			06/01/2016	Diana M. Turner	1800095, 1800096, 1800097, 1800098