

Chemical Analysis Report

SE-DIST-2016-03-01-01

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

Event Description: **SMP_2016_Yellow_weekof2/22_plus blank**

Request ID: **RQ-2016-02-22-24**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

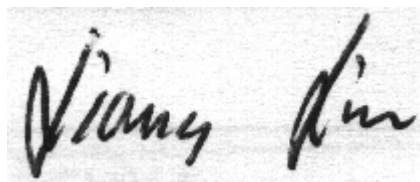
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

For additional information please contact

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-MAR-2016 15:52

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Ocean Canal 3.3 Miles W of US98/US441

Collection Date/Time: 02/29/2016 12:15

Field ID: G5SE0010_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775548	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P299555	
	EPA 300.0 Rev. 2.1	Chloride	310		mg Cl/L	P299735	
		Sulfate	160		mg SO4/L	P299738	
	SM 2120 B	Color (true)	180		PCU	P299534	
	SM 2320 B-97	Total Alkalinity	409		mg CaCO3/L	P300009	
	SM 2540 C-97	TDS	1.14E+03		mg/L	P299887	
	SM 2540 D-97	TSS	6	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.55		mg F/L	P300013	
1775554	EPA 350.1 Rev. 2.0	Ammonia-N	0.52		mg N/L	P300072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.7		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.3		mg N/L	P299797	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P299924	
	SM 5310 B-00	Organic Carbon	45		mg C/L	P299696	
1775560	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P299517	

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: Ocean Canal @ CR 880 East 3252A

Collection Date/Time: 02/29/2016 12:30

Field ID: G5SE0007_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775549	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P299555	
	EPA 300.0 Rev. 2.1	Chloride	370		mg Cl/L	P299735	
		Sulfate	140		mg SO4/L	P299738	
	SM 2120 B	Color (true)	170		PCU	P299534	
	SM 2320 B-97	Total Alkalinity	426		mg CaCO3/L	P300009	
	SM 2540 C-97	TDS	1.26E+03		mg/L	P299887	
	SM 2540 D-97	TSS	5	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.62		mg F/L	P300013	
1775555	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P300072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.0		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.92		mg N/L	P299797	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P299924	
	SM 5310 B-00	Organic Carbon	44		mg C/L	P299696	
1775561	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P299517	

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: Hillsboro Canal @ SR715 3248A

Collection Date/Time: 02/29/2016 13:20

Field ID: G5SE0025_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775550	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P299555	

Field ID: G5SE0025_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775550	EPA 300.0 Rev. 2.1	Chloride	270		mg Cl/L	P299735	
		Sulfate	190		mg SO4/L	P299738	
	SM 2120 B	Color (true)	160		PCU	P299535	
	SM 2320 B-97	Total Alkalinity	425		mg CaCO3/L	P300009	
	SM 2540 C-97	TDS	1.13E+03		mg/L	P299887	
	SM 2540 D-97	TSS	4	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.77		mg F/L	P300013	
1775556	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P300073	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.0		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P299798	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P299924	
	SM 5310 B-00	Organic Carbon	41		mg C/L	P299696	
1775562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.096		mg P/L	P299517	

Ref. Method and Comment:

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

Sample Location: N New River Canal @ SR80 3248

Collection Date/Time: 02/29/2016 14:00

Field ID: 28010912_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775551	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P299555	
	EPA 300.0 Rev. 2.1	Chloride	220		mg Cl/L	P299735	
		Sulfate	170		mg SO4/L	P299738	
	SM 2120 B	Color (true)	140		PCU	P299535	
	SM 2320 B-97	Total Alkalinity	427		mg CaCO3/L	P300009	
	SM 2540 C-97	TDS	1.04E+03		mg/L	P299887	
	SM 2540 D-97	TSS	7	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.72		mg F/L	P300013	
1775557	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P300073	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.74		mg N/L	P299798	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P299926	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P299696	
1775563	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P299517	

Ref. Method and Comment:

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

Sample Location: SFWMD Canal C2444

Collection Date/Time: 02/29/2016 14:40

Field ID: 28011001-02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775552	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P299555	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P299735	
		Sulfate	120		mg SO4/L	P299738	
	SM 2120 B	Color (true)	74		PCU	P299535	
	SM 2320 B-97	Total Alkalinity	461		mg CaCO3/L	P300009	

Field ID: 28011001-02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775552	SM 2540 C-97	TDS	836		mg/L	P299887	
	SM 2540 D-97	TSS	5	I	mg/L	P299790	
	SM 4500 F-C-97	Fluoride	0.75		mg F/L	P300013	
1775558	EPA 350.1 Rev. 2.0	Ammonia-N	2.1		mg N/L	P300073	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	4.2		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299798	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P299926	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P299696	
1775564	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P299517	

Ref. Method and Comment:

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

Sample Location: L25 Canal at Corkscrew Rd 3251

Collection Date/Time: 02/29/2016 15:20

Field ID: 28010980_02/29/2016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775553	EPA 180.1 Rev. 2.0	Turbidity	5.9	A	NTU	P299556	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P299735	
		Sulfate	84		mg SO4/L	P299738	
	SM 2120 B	Color (true)	74	A	PCU	P299535	
	SM 2320 B-97	Total Alkalinity	241		mg CaCO3/L	P300009	
	SM 2540 C-97	TDS	632		mg/L	P299888	
	SM 2540 D-97	TSS	7	I	mg/L	P299791	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P300013	
1775559	EPA 350.1 Rev. 2.0	Ammonia-N	0.48		mg N/L	P300073	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P299841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.46		mg N/L	P299798	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P299926	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P299696	
1775565	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P299517	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299555

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299556

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: P299735

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300072

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300073

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299797

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299798

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299926

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: P299517

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

Reference Method: SM 2120 B
Batch ID: P299534

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P299535

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300009

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

Reference Method: SM 2540 C-97
Batch ID: P299887

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P299888

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299790

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299791

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300013

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P299696

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: P299735

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300072

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299797

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299798

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299926

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299517

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

Reference Method: SM 2320 B-97
Batch ID: P300009

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

Reference Method: SM 4500 F-C-97
Batch ID: P300013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P299696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775377	Chloride	101	105	P/P	90 - 110
1775493	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775377	Sulfate	99.4	99.4	P/P	90 - 110
1775493	Sulfate	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775588	Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775544	Kjeldahl Nitrogen	98.2	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775495	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775558	NO2NO3-N	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775521	Total-P	104	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775557	Total-P	98.7	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775523	O-Phosphate-P	98.3	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P300013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775515	Fluoride	93.8	95.5	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P299696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775521	Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775493	Turbidity	4.16	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775553	Turbidity	0.679	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	Chloride	2.00	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P299738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	Sulfate	0.0346	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775503	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775588	Ammonia-N	1.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775544	Kjeldahl Nitrogen	2.41	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775495	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775558	NO2NO3-N	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775521	Total-P	3.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775557	Total-P	3.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775523	O-Phosphate-P	1.04	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P299534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775502	Color (true)	1.64	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P299535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775553	Color (true)	2.23	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775515	Total Alkalinity	3.58	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P299887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775377	TDS	4.33	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P299888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775584	TDS	3.09	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775515	Fluoride	1.52	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P299696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775521	Organic Carbon	0.0795	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: A67918
Included Lab Sample IDs: 1775560, 1775561, 1775562, 1775563, 1775564, 1775565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	99.1	P/P	90 - 110
O-Phosphate-P	99.1	99.3	P/P	90 - 110
O-Phosphate-P	99.3	97.9	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A67922
Included Lab Sample IDs: 1775548, 1775549, 1775550, 1775551, 1775552, 1775553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.4	P/P	90 - 115
Color (true)	99.1	100	P/P	90 - 115
Color (true)	99.4	99.1	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A67932
Included Lab Sample IDs: 1775548, 1775549, 1775550, 1775551, 1775552, 1775553

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67933

Included Lab Sample IDs: 1775548, 1775549, 1775550, 1775551, 1775552, 1775553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	103	101	P/P	90 - 110
Sulfate	101	97.2	P/P	90 - 110
Sulfate	97.2	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A67982

Included Lab Sample IDs: 1775554, 1775555, 1775556, 1775557, 1775558, 1775559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.5	95.6	P/P	90 - 110
Organic Carbon	95.0	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68011

Included Lab Sample IDs: 1775554, 1775555, 1775556, 1775557, 1775558, 1775559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68087

Included Lab Sample IDs: 1775554, 1775555, 1775556, 1775557, 1775559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	106	P/P	90 - 110
Kjeldahl Nitrogen	106	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68093

Included Lab Sample IDs: 1775548, 1775549, 1775550, 1775551, 1775552, 1775553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68094

Included Lab Sample IDs: 1775548, 1775549, 1775550, 1775551, 1775552, 1775553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.6	98.6	P/P	90 - 110
Fluoride	98.1	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68102

Included Lab Sample IDs: 1775554, 1775556

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68108

Included Lab Sample IDs: 1775557, 1775558, 1775559

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68110

Included Lab Sample IDs: 1775555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68112

Included Lab Sample IDs: 1775554, 1775555, 1775556, 1775557, 1775558, 1775559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.7	P/P	90 - 110
Ammonia-N	99.2	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68246

Included Lab Sample IDs: 1775558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	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				4.16	
	Turbidity				0.679	
EPA 300.0 Rev. 2.1	Chloride	103	101 105 104			2.00
	Sulfate	99.4	99.4 99.4 102			0.0346
EPA 350.1 Rev. 2.0	Ammonia-N	99.2				1.37
	Ammonia-N	99.3	103 101			1.84
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.2	98.2 102			2.41
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102 102			0.0
	NO2NO3-N	100	108 106			1.87
EPA 365.1 Rev. 2.0	Total-P	100	104 99.5			3.76
	Total-P	99.8	98.7 94.6			3.17
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	98.3 99.4			1.04
SM 2120 B	Color (true)				1.64	
	Color (true)				2.23	
SM 2320 B-97	Total Alkalinity	102			3.58	
SM 2540 C-97	TDS				4.33	
	TDS				3.09	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-97	Fluoride	96.9	93.8	95.5		1.52
SM 5310 B-00	Organic Carbon	94.6	97.6			0.0795

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1775560, 1775561, 1775562, 1775563, 1775564, 1775565
SM 2120 B / E31780	True Color measured at 450 nm	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1775554, 1775555, 1775556, 1775557, 1775558, 1775559

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	03/01/2016			03/01/2016 15:06	Sima Feizi	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
EPA 300.0 Rev. 2.1	03/01/2016			03/03/2016	Ping Hua	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
EPA 350.1 Rev. 2.0	03/01/2016			03/09/2016	Diana M. Turner	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 351.2 Rev. 2.0	03/01/2016	03/07/2016	Sofia Elnemr	03/08/2016	Rochelle Y Jackson	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 353.2 Rev. 2.0	03/01/2016			03/04/2016	Virginia P. Brown	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 365.1 Rev. 2.0	03/01/2016	03/08/2016	Lipi Saha	03/09/2016	Lipi Saha	1775554, 1775555, 1775556, 1775557, 1775558, 1775559
EPA 365.1 Rev. 2.0 dissolved	03/01/2016			03/01/2016 14:18	Julia Storbeck	1775562, 1775563
	03/01/2016			03/01/2016 14:31	Julia Storbeck	1775561
	03/01/2016			03/01/2016 14:32	Julia Storbeck	1775564
	03/01/2016			03/01/2016 14:33	Julia Storbeck	1775565
	03/01/2016			03/01/2016 14:43	Julia Storbeck	1775560
SM 2120 B	03/01/2016			03/01/2016 16:50	Rochelle Y Jackson	1775551
	03/01/2016			03/01/2016 16:51	Rochelle Y Jackson	1775552
	03/01/2016			03/01/2016 16:52	Rochelle Y Jackson	1775553
	03/01/2016			03/01/2016 17:07	Rochelle Y Jackson	1775548
	03/01/2016			03/01/2016 17:09	Rochelle Y Jackson	1775549
SM 2320 B-97	03/01/2016			03/01/2016 17:10	Rochelle Y Jackson	1775550
	03/01/2016			03/08/2016	Dale L. Simmons	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 2540 C-97	03/01/2016			03/02/2016	Yijie Li	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 2540 D-97	03/01/2016			03/02/2016	Yijie Li	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 4500 F-C-97	03/01/2016			03/07/2016	Dale L. Simmons	1775548, 1775549, 1775550, 1775551, 1775552, 1775553
SM 5310 B-00	03/01/2016			03/03/2016	Sofia Elnemr	1775554, 1775555, 1775556, 1775557, 1775558, 1775559