Chemical Analysis Report

SW-DIST-2016-04-21-01

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

Event Description: **1535, 1440A, 1341H**
Request ID: **RQ-2016-04-18-34**
Customer: **SW-DIST**
Project ID: **SMP**

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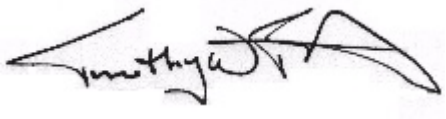
Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 17-MAY-2016 13:15



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: 24040150 **Collection Date/Time: 04/20/2016 11:30**

Field ID: G5SW0029 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791588	EPA 180.1 Rev. 2.0	Turbidity	1.3	A	NTU	P302764	
	SM 2320 B-97	Total Alkalinity	152		mg CaCO3/L	P302992	
	SM 2540 D-97	TSS	5	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P302995	
1791594	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P303765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P303336	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P304106	
1791600	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: NO2NO3-N: The MDL was elevated due to sample matrix interference.

Sample Location: G5SW0061 **Collection Date/Time: 04/20/2016 11:55**

Field ID: G5SW0061 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791589	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P302764	
	SM 2320 B-97	Total Alkalinity	149	A	mg CaCO3/L	P302992	
	SM 2540 D-97	TSS	3	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.76		mg F/L	P302995	
1791595	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P303765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P303336	
	SM 5310 B-00	Organic Carbon	5.4		mg C/L	P304106	
1791601	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: NO2NO3-N: The MDL was elevated due to sample matrix interference.

Sample Location: 28084578245354 **Collection Date/Time: 04/20/2016 14:25**

Field ID: G5SW0124 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791590	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P302764	
	SM 2320 B-97	Total Alkalinity	113		mg CaCO3/L	P302992	
	SM 2540 D-97	TSS	5	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P302995	
1791596	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P303765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P303336	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P304106	

Field ID: G5SW0124 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791602	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: NO2NO3-N: The MDL was elevated due to sample matrix interference.

Sample Location: 2809100824615 **Collection Date/Time: 04/20/2016 13:35**

Field ID: G5SW0079 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791591	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P302764	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P302992	
	SM 2540 D-97	TSS	4	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.90		mg F/L	P302995	
1791597	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P303765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P303336	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P304106	
1791603	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: NO2NO3-N: The MDL was elevated due to sample matrix interference.

Sample Location: 280859708245532 **Collection Date/Time: 04/20/2016 14:00**

Field ID: G5SW0078 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791592	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P302764	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P302992	
	SM 2540 D-97	TSS	5	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P302995	
1791598	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P303765	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P303336	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P304106	
1791604	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 353.2 Rev. 2.0: NO2NO3-N: The MDL was elevated due to sample matrix interference.

Sample Location: 2808320824553 **Collection Date/Time: 04/20/2016 14:15**

Field ID: G5SW0125 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791593	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P302764	
	SM 2320 B-97	Total Alkalinity	113		mg CaCO3/L	P302992	

Field ID: G5SW0125 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1791593	SM 2540 D-97	TSS	6	I	mg/L	P303256	
	SM 4500 F-C-97	Fluoride	0.81		mg F/L	P302995	
1791599	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P303589	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P303771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303061	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P303338	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P304106	
1791605	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302716	

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: P302764

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303589

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303771

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303061

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303336

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
Batch ID: P303338

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302716

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

Reference Method: SM 2320 B-97
Batch ID: P302992

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

Reference Method: SM 2540 D-97
Batch ID: P303256

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P302995

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304106

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303589

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303771

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303771

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: P303061

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303336

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303338

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302716

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

Reference Method: SM 2320 B-97
Batch ID: P302992

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

Reference Method: SM 4500 F-C-97
Batch ID: P302995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304106

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303589

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791594	Ammonia-N	105	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791512	Kjeldahl Nitrogen	93.1	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791599	Kjeldahl Nitrogen	91.6	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791515	NO2NO3-N	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791512	Total-P	96.5	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791599	Total-P	92.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791443	O-Phosphate-P	99.4	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P302995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791589	Fluoride	97.8	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1791597	Organic Carbon	94.7	94.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P302764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791588	Turbidity	3.83	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791594	Ammonia-N	3.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791512	Kjeldahl Nitrogen	4.57	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791599	Kjeldahl Nitrogen	2.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791515	NO2NO3-N	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791512	Total-P	1.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791599	Total-P	8.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791443	O-Phosphate-P	0.282	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P302992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791589	Total Alkalinity	0.357	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P302995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791589	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P304106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1791597	Organic Carbon	0.0	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: A69022
Included Lab Sample IDs: 1791600, 1791601, 1791602, 1791603, 1791604, 1791605

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	98.5	P/P	90 - 110
O-Phosphate-P	99.7	99.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69035
Included Lab Sample IDs: 1791588, 1791589, 1791590, 1791591, 1791592, 1791593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 2320 B-97
Run ID: A69110
Included Lab Sample IDs: 1791588, 1791589, 1791590, 1791591, 1791592, 1791593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A69110
Included Lab Sample IDs: 1791588, 1791589, 1791590, 1791591, 1791592, 1791593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A69110
Included Lab Sample IDs: 1791588, 1791589, 1791590, 1791591, 1791592, 1791593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69129
Included Lab Sample IDs: 1791594, 1791595, 1791596, 1791597, 1791598, 1791599

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69269
Included Lab Sample IDs: 1791594, 1791595, 1791596, 1791597, 1791598, 1791599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110
Total-P	99.2	100	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A69277
Included Lab Sample IDs: 1791594, 1791595, 1791596, 1791597, 1791598, 1791599

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69369
Included Lab Sample IDs: 1791594, 1791595, 1791596, 1791597, 1791598, 1791599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	99.0	P/P	90 - 110
Kjeldahl Nitrogen	97.3	96.3	P/P	90 - 110
Kjeldahl Nitrogen	97.4	96.9	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69431
Included Lab Sample IDs: 1791594, 1791595, 1791596, 1791597, 1791598, 1791599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	91.6	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					3.83	
EPA 350.1 Rev. 2.0	Ammonia-N	100	105	101			3.67
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	93.1	98.0			4.57
	Kjeldahl Nitrogen	106	91.6	94.6			2.47
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	103			1.87
EPA 365.1 Rev. 2.0	Total-P	96.8	96.5	95.5			1.09
	Total-P	97.8	92.4	101			8.89
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	99.4	99.1			0.282
SM 2320 B-97	Total Alkalinity	101				0.357	
SM 4500 F-C-97	Fluoride	97.7	97.8	97.8			0.0
SM 5310 B-00	Organic Carbon	99.2	94.7	94.7			0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1791600, 1791601, 1791602, 1791603, 1791604, 1791605
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1791594, 1791595, 1791596, 1791597, 1791598, 1791599

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	04/21/2016			04/21/2016 15:04	Sima Feizi	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
EPA 350.1 Rev. 2.0	04/21/2016			05/04/2016	Diana M. Turner	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 351.2 Rev. 2.0	04/21/2016	05/09/2016	Sofia Elnemr	05/10/2016	Christopher Armour	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 353.2 Rev. 2.0	04/21/2016			04/27/2016	Peter D. Kaus	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 365.1 Rev. 2.0	04/21/2016	05/02/2016	Vijayalakshmi Reddy	05/04/2016	Lipi Saha	1791594, 1791595, 1791596, 1791597, 1791598, 1791599
EPA 365.1 Rev. 2.0 dissolved	04/21/2016			04/21/2016 14:27	Ping Hua	1791600
	04/21/2016			04/21/2016 14:28	Ping Hua	1791601
	04/21/2016			04/21/2016 14:29	Ping Hua	1791602, 1791603
	04/21/2016			04/21/2016 14:37	Ping Hua	1791604
	04/21/2016			04/21/2016 14:38	Ping Hua	1791605
SM 2320 B-97	04/21/2016			04/27/2016	Dale L. Simmons	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 2540 D-97	04/21/2016			04/25/2016	Sima Feizi	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 4500 F-C-97	04/21/2016			04/27/2016	Dale L. Simmons	1791588, 1791589, 1791590, 1791591, 1791592, 1791593
SM 5310 B-00	04/21/2016			05/11/2016	Diana M. Turner	1791594, 1791595, 1791596, 1791597, 1791598, 1791599