

Chemical Analysis Report

SW-DIST-2016-06-23-02

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

Event Description: **1409C, 1440A**
Request ID: **RQ-2016-06-20-43**
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: Matt Bearden

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 14-JUL-2016 10:53

A handwritten signature in black ink, appearing to read "Timothy Fitzpatrick", is written over a light gray rectangular 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: Minno Creek (Direct Run Off)

Collection Date/Time: 06/22/2016 11:35

Field ID: G5SW0042

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1810827	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P306767	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P307270	
	SM 2540 D-97	TSS	4	I	mg/L	P307454	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P307269	
1810830	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P307356	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P306955	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P307153	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P306918	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P307217	
1810833	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P306760	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 06/28/2016.

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

Sample Location: Minno Creek (Direct Run Off)

Collection Date/Time: 06/22/2016 11:40

Field ID: Duplicate

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1810828	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P306767	
	SM 2320 B-97	Total Alkalinity	120	A	mg CaCO3/L	P307270	
	SM 2540 D-97	TSS	3	I	mg/L	P307454	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P307269	
1810831	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P307356	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P306955	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P307565	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P306918	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P307217	
1810834	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P306760	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 06/28/2016.

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

Sample Location: Field Blank

Collection Date/Time: 06/22/2016 11:50

Field ID: Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1810829	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P306768	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P307267	
	SM 2540 D-97	TSS	2	U	mg/L	P307453	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P307268	
1810832	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P307088	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P306862	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P306926	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P306959	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P307215	

Field ID: Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1810835	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P306760	

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: P306767

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P306768

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P307088

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P307356

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P306862

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P306955

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P306926

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P307153

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307565

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306918

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306760

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

Reference Method: SM 2320 B-97
Batch ID: P307267

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

Reference Method: SM 2320 B-97
Batch ID: P307270

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

Reference Method: SM 2540 D-97
Batch ID: P307453

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P307454

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307268

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P307269

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307215

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

Reference Method: SM 5310 B-00
Batch ID: P307217

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: P307088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	90.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306862

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306955

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307153

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: P307153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307565

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306760

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

Reference Method: SM 2320 B-97
Batch ID: P307267

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

Reference Method: SM 2320 B-97
Batch ID: P307270

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

Reference Method: SM 4500 F-C-97
Batch ID: P307268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P307269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P307215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P307217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	114		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810634	Ammonia-N	91.3	91.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810830	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810765	Kjeldahl Nitrogen	99.4	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810786	Kjeldahl Nitrogen	91.9	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810704	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810787	NO2NO3-N	94.0	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307565

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1813178	NO2NO3-N	97.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810784	Total-P	90.4	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810941	Total-P	98.6	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810876	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P307268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810894	Fluoride	97.8	99.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P307269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810828	Fluoride	92.3	95.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810895	Organic Carbon	107		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P307217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810785	Organic Carbon	101	103	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810672	Turbidity	1.76	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810894	Turbidity	1.32	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810634	Ammonia-N	0.163	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810830	Ammonia-N	0.497	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810765	Kjeldahl Nitrogen	6.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P306955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810786	Kjeldahl Nitrogen	1.36	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810704	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810787	NO2NO3-N	3.14	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1813178	NO2NO3-N	1.91	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810784	Total-P	3.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810941	Total-P	1.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810876	O-Phosphate-P	0.655	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810894	Total Alkalinity	0.179	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P307270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810828	Total Alkalinity	1.41	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P307268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810894	Fluoride	1.45	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P307269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810828	Fluoride	1.90	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P307215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810895	Organic Carbon	0.884	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P307217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810785	Organic Carbon	1.50	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: A70196
Included Lab Sample IDs: 1810833, 1810834, 1810835

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	99.1	P/P	90 - 110
O-Phosphate-P	99.3	97.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70197
Included Lab Sample IDs: 1810827, 1810828, 1810829

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70248
Included Lab Sample IDs: 1810832

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70266
Included Lab Sample IDs: 1810832

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70274
Included Lab Sample IDs: 1810830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70274

Included Lab Sample IDs: 1810830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70291

Included Lab Sample IDs: 1810830, 1810831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70292

Included Lab Sample IDs: 1810830, 1810831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	97.6	P/P	90 - 110
Kjeldahl Nitrogen	99.4	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70306

Included Lab Sample IDs: 1810832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	93.3	93.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70345

Included Lab Sample IDs: 1810832

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

Reference Method: SM 5310 B-00

Run ID: A70358

Included Lab Sample IDs: 1810830, 1810831, 1810832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110
Organic Carbon	107	98.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70370

Included Lab Sample IDs: 1810827, 1810828, 1810829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	99.8	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A70370

Included Lab Sample IDs: 1810827, 1810828, 1810829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.5	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70390

Included Lab Sample IDs: 1810830, 1810831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70459

Included Lab Sample IDs: 1810831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	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					1.76	
	Turbidity					1.32	
EPA 350.1 Rev. 2.0	Ammonia-N	90.4	91.3	91.6			0.163
	Ammonia-N	97.5	105	104			0.497
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.4	107			6.91
	Kjeldahl Nitrogen	100	91.9	94.1			1.36
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102			0.990
	NO2NO3-N	95.0	94.0	97.0			3.14
	NO2NO3-N	104	97.8	100			1.91
EPA 365.1 Rev. 2.0	Total-P	95.1	90.4	93.8			3.50
	Total-P	103	98.6	97.5			1.08
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	100	101			0.655
SM 2320 B-97	Total Alkalinity	103				0.179	
	Total Alkalinity	103				1.41	
SM 4500 F-C-97	Fluoride	96.3	97.8	99.6			1.45
	Fluoride	97.2	92.3	95.2			1.90
SM 5310 B-00	Organic Carbon	101	107				0.884
	Organic Carbon	114	101	103			1.50

Reference Method Descriptions

Method / DoH Cert #

Description

Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1810827, 1810828, 1810829
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1810830, 1810831, 1810832
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1810830, 1810831, 1810832
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1810830, 1810831, 1810832
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1810830, 1810831, 1810832
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1810833, 1810834, 1810835
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1810827, 1810828, 1810829
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1810827, 1810828, 1810829
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1810827, 1810828, 1810829
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1810830, 1810831, 1810832

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	06/23/2016			06/23/2016 15:44	Sima Feizi	1810827, 1810828, 1810829
EPA 350.1 Rev. 2.0	06/23/2016			06/29/2016	Diana M. Turner	1810832
	06/23/2016			07/05/2016	Diana M. Turner	1810830, 1810831
EPA 351.2 Rev. 2.0	06/23/2016	06/27/2016	Sofia Elnemr	06/28/2016	Christopher Armour	1810832
	06/23/2016	06/28/2016	Sofia Elnemr	06/29/2016	Christopher Armour	1810830, 1810831
EPA 353.2 Rev. 2.0	06/23/2016			06/27/2016	Peter D. Kaus	1810832
	06/23/2016			06/28/2016	Beverly Y. Sanders	1810830
	06/23/2016			07/08/2016	Beverly Y. Sanders	1810831
EPA 365.1 Rev. 2.0	06/23/2016	06/27/2016	Vijayalakshmi Reddy	06/28/2016	Lipi Saha	1810830, 1810831
	06/23/2016	06/28/2016	Vijayalakshmi Reddy	06/29/2016	Lipi Saha	1810832
EPA 365.1 Rev. 2.0 dissolved	06/23/2016			06/23/2016 14:44	Julia Storbeck	1810835
	06/23/2016			06/23/2016 14:54	Julia Storbeck	1810833
	06/23/2016			06/23/2016 14:55	Julia Storbeck	1810834
SM 2320 B-97	06/23/2016			06/30/2016	Dale L. Simmons	1810829
	06/23/2016			07/01/2016	Dale L. Simmons	1810827, 1810828
SM 2540 D-97	06/23/2016			06/27/2016	Sima Feizi	1810827, 1810828, 1810829
SM 4500 F-C-97	06/23/2016			06/30/2016	Dale L. Simmons	1810829
	06/23/2016			07/01/2016	Dale L. Simmons	1810827, 1810828
SM 5310 B-00	06/23/2016			06/30/2016	Sofia Elnemr	1810832
	06/23/2016			07/01/2016	Sofia Elnemr	1810830, 1810831