

Chemical Analysis Report

SW-DIST-2016-07-13-01

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

Event Description: **GOM SE**
Request ID: **RQ-2016-07-11-34**
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: Liang Lin, Environmental Administrator

Date Certified: 08-AUG-2016 10:15

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: PITHLACHASCOTEE RIVER

Collection Date/Time: 07/12/2016 11:38

Field ID: G5SW0029

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815602	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P307901	
	SM 2320 B-97	Total Alkalinity	141		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	7	I	mg/L	P308598	
	SM 4500 F-C-97	Fluoride	0.83		mg F/L	P308530	
1815608	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P308566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P308011	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P309048	
1815614	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P307861	

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: GOM SE

Collection Date/Time: 07/12/2016 12:10

Field ID: G5SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815603	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P307902	
	SM 2320 B-97	Total Alkalinity	142		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	10	I	mg/L	P308598	
	SM 4500 F-C-97	Fluoride	0.93		mg F/L	P308530	
1815609	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P308566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P308011	
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P309048	
1815615	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307861	

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: KREAMER BAYOU

Collection Date/Time: 07/12/2016 14:00

Field ID: G5SW0079

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815604	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P307902	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	12		mg/L	P308598	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P308530	
1815610	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P308566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P308011	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P309048	
1815616	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P307861	

Field ID: G5SW0079

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: SPRING BAYOU

Collection Date/Time: 07/12/2016 14:20

Field ID: G5SW0078

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815605	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P307902	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	10		mg/L	P308598	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P308530	
1815611	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P308566	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P308011	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P309048	
1815617	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P307861	

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: 125

Collection Date/Time: 07/12/2016 14:30

Field ID: G5SW0125

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815606	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P307902	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	13		mg/L	P308598	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P308530	
1815612	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P308166	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P308137	
	SM 5310 B-00	Organic Carbon	7.1		mg C/L	P309048	
1815618	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P307861	

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: 124

Collection Date/Time: 07/12/2016 14:40

Field ID: G5SW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815607	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P307902	
	SM 2320 B-97	Total Alkalinity	115		mg CaCO3/L	P308527	
	SM 2540 D-97	TSS	9	I	mg/L	P308598	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P308530	
1815613	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P308348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P308166	

Field ID: G5SW0124

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1815613	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P308729	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P308137	
	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P309048	
1815619	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P307861	

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: P307901

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307902

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308348

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308166

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308566

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308729

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308011

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: P308137

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307861

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

Reference Method: SM 2320 B-97
Batch ID: P308527

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

Reference Method: SM 2540 D-97
Batch ID: P308598

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308530

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P309048

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: P308348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308166

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308566

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P308566

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P308729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P308011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P308137

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P307861

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

Reference Method: SM 2320 B-97
 Batch ID: P308527

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

Reference Method: SM 4500 F-C-97
 Batch ID: P308530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P309048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P308348

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815608	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815612	Kjeldahl Nitrogen	99.1	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812123	Kjeldahl Nitrogen	98.4	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815608	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815608	Total-P	90.0	91.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815612	Total-P	90.4	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815614	O-Phosphate-P	98.7	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P308530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1817437	Fluoride	97.5	98.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P309048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815322	Organic Carbon	92.4	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815547	Turbidity	3.92	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815603	Turbidity	9.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P308348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815608	Ammonia-N	0.688	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815612	Kjeldahl Nitrogen	6.42	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P308566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812123	Kjeldahl Nitrogen	1.42	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815608	NO2NO3-N	0.930	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815608	Total-P	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P308137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815612	Total-P	4.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815614	O-Phosphate-P	0.953	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817437	Total Alkalinity	0.243	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P308530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1817437	Fluoride	0.947	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P309048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815322	Organic Carbon	4.53	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: A70533
Included Lab Sample IDs: 1815614, 1815615, 1815616, 1815617, 1815618, 1815619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70544
Included Lab Sample IDs: 1815602, 1815603, 1815604, 1815605, 1815606, 1815607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70640
Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70640

Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70648

Included Lab Sample IDs: 1815612, 1815613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70675

Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611, 1815612, 1815613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70723

Included Lab Sample IDs: 1815612, 1815613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.9	P/P	90 - 110
Kjeldahl Nitrogen	96.1	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70728

Included Lab Sample IDs: 1815602, 1815603, 1815604, 1815605, 1815606, 1815607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70728

Included Lab Sample IDs: 1815602, 1815603, 1815604, 1815605, 1815606, 1815607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70755

Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	106	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70792

Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611, 1815612, 1815613

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

Reference Method: SM 5310 B-00

Run ID: A70902

Included Lab Sample IDs: 1815608, 1815609, 1815610, 1815611, 1815612, 1815613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	93.0	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				3.92	
	Turbidity				9.12	
EPA 350.1 Rev. 2.0	Ammonia-N	97.1	104 105			0.688
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	99.1 107			6.42
	Kjeldahl Nitrogen	103	98.4 96.5			1.42
EPA 353.2 Rev. 2.0	NO2NO3-N	105	103 104			0.930
EPA 365.1 Rev. 2.0	Total-P	94.3	90.0 91.8			1.87
	Total-P	99.1	90.4 94.6			4.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	98.7 99.7			0.953
SM 2320 B-97	Total Alkalinity	103			0.243	
SM 4500 F-C-97	Fluoride	99.8	97.5 98.7			0.947
SM 5310 B-00	Organic Carbon	98.7	92.4 97.1			4.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1815614, 1815615, 1815616, 1815617, 1815618, 1815619
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1815602, 1815603, 1815604, 1815605, 1815606, 1815607

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1815608, 1815609, 1815610, 1815611, 1815612, 1815613

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	07/13/2016			07/13/2016 15:26	Sima Feizi	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
EPA 350.1 Rev. 2.0	07/13/2016			07/20/2016	Diana M. Turner	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 351.2 Rev. 2.0	07/13/2016	07/19/2016	Sofia Elnemr	07/21/2016	Christopher Armour	1815612, 1815613
	07/13/2016	07/25/2016	Martin Acosta	07/26/2016	Christopher Armour	1815608, 1815609, 1815610, 1815611
EPA 353.2 Rev. 2.0	07/13/2016			07/27/2016	Peter D. Kaus	1815608, 1815609, 1815610, 1815611, 1815612, 1815613
EPA 365.1 Rev. 2.0	07/13/2016	07/15/2016	Vijayalakshmi Reddy	07/20/2016	Lipi Saha	1815608, 1815609, 1815610, 1815611
	07/13/2016	07/18/2016	Vijayalakshmi Reddy	07/20/2016	Lipi Saha	1815612, 1815613
EPA 365.1 Rev. 2.0 dissolved	07/13/2016			07/13/2016 15:23	Julia Storbeck	1815614
	07/13/2016			07/13/2016 16:12	Julia Storbeck	1815615
	07/13/2016			07/13/2016 16:13	Julia Storbeck	1815616
	07/13/2016			07/13/2016 16:14	Julia Storbeck	1815617
	07/13/2016			07/13/2016 16:15	Julia Storbeck	1815618
	07/13/2016			07/13/2016 16:16	Julia Storbeck	1815619
SM 2320 B-97	07/13/2016			07/23/2016	Dale L. Simmons	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
SM 2540 D-97	07/13/2016			07/18/2016	Yijie Li	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
SM 4500 F-C-97	07/13/2016			07/23/2016	Dale L. Simmons	1815602, 1815603, 1815604, 1815605, 1815606, 1815607
SM 5310 B-00	07/13/2016			08/02/2016	Sofia Elnemr	1815608, 1815609, 1815610, 1815611, 1815612, 1815613