

Chemical Analysis Report

SE-DIST-2017-06-22-02

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

Event Description: **SMP-Biscayne bay Run (2/5)**

Request ID: **RQ-2017-02-13-15**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

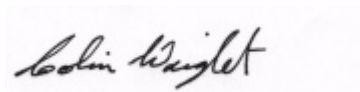
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
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Attn: Matthew Sewell

For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 12-JUL-2017 17:12



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: WBID 8070 CAPE SABLE

Collection Date/Time: 06/21/2017 10:30

Field ID: G5SD0075

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908419	EPA 180.1 Rev. 2.0	Turbidity	8.1		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	52		mg/L	P327729	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P327623	
1908426	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P327672	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P327436	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327522	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P327803	
1908433	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P327355	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ENRE-5 CAPE SABLE

Collection Date/Time: 06/21/2017 10:50

Field ID: G5SD0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908420	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	11		mg/L	P327729	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P327623	
1908427	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P327672	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P327435	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P327471	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P327803	
1908434	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327355	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ENRE-13 CAPE SABLE

Collection Date/Time: 06/21/2017 11:10

Field ID: G5SD0076

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908421	EPA 180.1 Rev. 2.0	Turbidity	8.0		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	25		mg/L	P327729	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P327623	
1908428	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P327430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P327435	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P327472	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P327803	
1908435	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327355	

Field ID: G5SD0076

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment: SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.							

Sample Location: SHARK SLOUGH ENRE9

Collection Date/Time: 06/21/2017 11:35

Field ID: G5SD0040

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908422	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	176		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	27	A	mg/L	P327730	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P327623	
1908429	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P327430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P327435	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P327472	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P327803	
1908436	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P327355	

Sample Location: SHARK SLOUGH- ENRE 14

Collection Date/Time: 06/21/2017 11:45

Field ID: G5SD0077

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908423	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	208		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	20		mg/L	P327730	
	SM 4500 F-C-97	Fluoride	0.84		mg F/L	P327623	
1908430	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P327430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P327435	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P327472	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P327803	
1908437	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P327355	

Sample Location: LOSTMAN BAY- ENRE 9

Collection Date/Time: 06/21/2017 12:30

Field ID: G5SD0041

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908424	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	138		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	16		mg/L	P327730	
	SM 4500 F-C-97	Fluoride	0.71		mg F/L	P327623	
1908431	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P327430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P327438	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P327472	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P327803	

Field ID: G5SD0041

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908438	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327355	

Sample Location: LOSTMAN BAY- ENRE 12

Collection Date/Time: 06/21/2017 12:40

Field ID: G5SD0078

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908425	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P327359	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P327619	
	SM 2540 D-97	TSS	15		mg/L	P327730	
	SM 4500 F-C-97	Fluoride	0.67		mg F/L	P327623	
1908432	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P327430	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P327438	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P327523	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P327472	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P327803	
1908439	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P327355	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P327359

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327430

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P327672

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P327435

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P327436

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327438

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327523

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327472

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327355

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

Reference Method: SM 2320 B-97
Batch ID: P327619

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-97
Batch ID: P327729

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327730

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327803

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: P327430

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327672

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

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: P327436

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: P327438

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: P327522

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327523

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: P327523

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: P327471

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327355

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

Reference Method: SM 2320 B-97
Batch ID: P327619

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

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P327803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908428	Ammonia-N	99.8	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327672

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: P327672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908622	Ammonia-N	97.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908427	Kjeldahl Nitrogen	92.4	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908468	Kjeldahl Nitrogen	109	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908543	Kjeldahl Nitrogen	98.3	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908165	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908427	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908371	Total-P	101	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908428	Total-P	95.3	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908433	O-Phosphate-P	94.0	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908620	Fluoride	97.4	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P327803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908303	Organic Carbon	91.0	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908385	Turbidity	0.792	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908428	Ammonia-N	0.259	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908622	Ammonia-N	0.479	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908427	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908468	Kjeldahl Nitrogen	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908543	Kjeldahl Nitrogen	3.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908165	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908427	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908371	Total-P	6.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908428	Total-P	0.854	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908433	O-Phosphate-P	1.81	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908620	Total Alkalinity	0.128	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P327730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908422	TSS	1.48	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P327623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908620	Fluoride	0.915	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908303	Organic Carbon	3.46	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 180.1 Rev. 2.0
Run ID: A77286
Included Lab Sample IDs: 1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77298
Included Lab Sample IDs: 1908433, 1908434, 1908435, 1908436, 1908437, 1908438, 1908439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	101	99.2	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77320
Included Lab Sample IDs: 1908428, 1908429, 1908430, 1908431, 1908432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77359
Included Lab Sample IDs: 1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77365

Included Lab Sample IDs: 1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.0	P/P	90 - 110
Total-P	98.2	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77390

Included Lab Sample IDs: 1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425

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

Reference Method: SM 4500 F-C-97

Run ID: A77390

Included Lab Sample IDs: 1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.7	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77410

Included Lab Sample IDs: 1908426, 1908427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77436

Included Lab Sample IDs: 1908426, 1908427, 1908428, 1908429, 1908430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.2	94.9	P/P	90 - 110
Kjeldahl Nitrogen	94.9	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77447

Included Lab Sample IDs: 1908431, 1908432

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

Reference Method: SM 5310 B-00

Run ID: A77463

Included Lab Sample IDs: 1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	93.8	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.792	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.8	99.6			0.259
	Ammonia-N	102	97.2	97.8			0.479
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	92.4	96.3			3.61
	Kjeldahl Nitrogen	102	109	107			1.51
	Kjeldahl Nitrogen	103	98.3	102			3.35
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	104	104			0.480
	NO ₂ NO ₃ -N	104	106	105			0.475
EPA 365.1 Rev. 2.0	Total-P	102	101	94.6			6.15
	Total-P	93.4	95.3	94.5			0.854
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	94.0	95.8			1.81
SM 2320 B-97	Total Alkalinity	103				0.128	
SM 2540 D-97	TSS					1.48	
SM 4500 F-C-97	Fluoride	95.8	97.4	98.8			0.915
SM 5310 B-00	Organic Carbon	96.0	91.0	95.5			3.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1908433, 1908434, 1908435, 1908436, 1908437, 1908438, 1908439
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432

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	06/22/2017			06/22/2017 16:55	DeAsia Armster	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
EPA 350.1 Rev. 2.0	06/22/2017			06/23/2017	Sofia Elnemr	1908428, 1908429, 1908430, 1908431, 1908432
	06/22/2017			06/28/2017	Sofia Elnemr	1908426, 1908427
EPA 351.2 Rev. 2.0	06/22/2017	06/26/2017	Adrian Shelby	06/29/2017	Joseph Suarez	1908426, 1908427, 1908428, 1908429, 1908430
	06/22/2017	06/26/2017	Adrian Shelby	06/30/2017	Joseph Suarez	1908431, 1908432
EPA 353.2 Rev. 2.0	06/22/2017			06/27/2017	Beverly Y. Sanders	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 365.1 Rev. 2.0	06/22/2017	06/26/2017	Vijayalakshmi Reddy	06/27/2017	Lipi Saha	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432
EPA 365.1 Rev. 2.0 dissolved	06/22/2017			06/22/2017 16:50	Anthony C. Onicha	1908433
	06/22/2017			06/22/2017 17:30	Anthony C. Onicha	1908434
	06/22/2017			06/22/2017 17:35	Anthony C. Onicha	1908435
	06/22/2017			06/22/2017 17:36	Anthony C. Onicha	1908436
	06/22/2017			06/22/2017 17:37	Anthony C. Onicha	1908437
	06/22/2017			06/22/2017 17:38	Anthony C. Onicha	1908438
	06/22/2017			06/22/2017 17:39	Anthony C. Onicha	1908439
SM 2320 B-97	06/22/2017			06/28/2017	Dale L. Simmons	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 2540 D-97	06/22/2017			06/26/2017	Sima Feizi	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 4500 F-C-97	06/22/2017			06/28/2017	Dale L. Simmons	1908419, 1908420, 1908421, 1908422, 1908423, 1908424, 1908425
SM 5310 B-00	06/22/2017			06/30/2017	Sofia Elnemr	1908426, 1908427, 1908428, 1908429, 1908430, 1908431, 1908432