

Chemical Analysis Report

SO-DIST-2017-08-15-01

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

Event Description: **SMP: Bay of Florida**
Request ID: **RQ-2017-08-07-61**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 01-SEP-2017 10:00



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: 8068 @ ENRE5-Middle

Collection Date/Time: 08/14/2017 13:30

Field ID: G5SD081417-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921307	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P330254	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	3	U	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P330399	
1921313	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P330369	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P330321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	5.8		mg C/L	P330560	
1921319	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P330243	

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: 8067 @ ENRE5

Collection Date/Time: 08/14/2017 12:30

Field ID: G5SD081417-3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921308	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P330254	
	SM 2320 B-97	Total Alkalinity	137	A	mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	4	I	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	0.94		mg F/L	P330399	
1921314	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P330369	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P330321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P330560	
1921320	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P330243	

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: 8066 @ ENRE5

Collection Date/Time: 08/14/2017 12:00

Field ID: G5SD081417-4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921309	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P330254	
	SM 2320 B-97	Total Alkalinity	137		mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	3	I	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P330399	
1921315	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P330369	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P330321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	5.3		mg C/L	P330560	
1921321	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P330243	

Field ID: G5SD081417-4

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: 8066 @ ENRE10

Collection Date/Time: 08/14/2017 11:20

Field ID: G5SD081417-5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921310	EPA 180.1 Rev. 2.0	Turbidity	3.8	A	NTU	P330255	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	4	I	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P330399	
1921316	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P330374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P330321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P330560	
1921322	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P330243	

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: 8066 @ ENRE10 to South

Collection Date/Time: 08/14/2017 11:30

Field ID: G5SD081417-6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921311	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P330255	
	SM 2320 B-97	Total Alkalinity	147		mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	3	U	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	0.80		mg F/L	P330399	
1921317	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P330374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P330321	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P330560	
1921323	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P330243	

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: 8068 @ ENRE5-North

Collection Date/Time: 08/14/2017 13:10

Field ID: G5SD081417-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921312	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P330255	
	SM 2320 B-97	Total Alkalinity	146		mg CaCO3/L	P330397	
	SM 2540 D-97	TSS	3	IA	mg/L	P330637	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P330399	
1921318	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P330374	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P330545	

Field ID: G5SD081417-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1921318	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P330381	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P330328	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P330560	
1921324	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P330243	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P330254

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P330255

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P330369

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P330374

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P330321

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P330545

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P330381

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330328

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330243

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

Reference Method: SM 2320 B-97
Batch ID: P330397

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

Reference Method: SM 2540 D-97
Batch ID: P330637

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P330399

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P330560

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: P330369

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330374

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330321

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: P330321

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P330545

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: P330381

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: P330328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P330243

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	106		P	90 - 110

Reference Method: SM 2320 B-97
 Batch ID: P330397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P330399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P330560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P330369

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: P330369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1920731	Ammonia-N	106	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921316	Ammonia-N	105	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921274	Kjeldahl Nitrogen	95.8	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330545

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921318	Kjeldahl Nitrogen	95.3	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921821	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921317	Total-P	92.6	92.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921319	O-Phosphate-P	96.4	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P330399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921308	Fluoride	95.8	97.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P330560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1921407	Organic Carbon	92.4	91.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P330254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921209	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P330255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921310	Turbidity	1.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1920731	Ammonia-N	4.41	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P330374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921316	Ammonia-N	1.62	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921274	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P330545

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921318	Kjeldahl Nitrogen	4.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P330381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921821	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P330328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921317	Total-P	0.185	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P330243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921319	O-Phosphate-P	0.971	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P330397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921308	Total Alkalinity	0.141	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P330399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921308	Fluoride	0.946	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P330560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1921407	Organic Carbon	0.492	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: A78412
Included Lab Sample IDs: 1921319, 1921320, 1921321, 1921322, 1921323, 1921324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	99.4	P/P	90 - 110
O-Phosphate-P	99.4	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A78413
Included Lab Sample IDs: 1921307, 1921308, 1921309, 1921310, 1921311, 1921312

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 350.1 Rev. 2.0
Run ID: A78450
Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317, 1921318

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78450

Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317, 1921318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.9	P/P	90 - 110
Ammonia-N	101	100	P/P	90 - 110
Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78455

Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317, 1921318

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78462

Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A78465

Included Lab Sample IDs: 1921307, 1921308, 1921309, 1921310, 1921311, 1921312

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

Reference Method: SM 4500 F-C-97

Run ID: A78465

Included Lab Sample IDs: 1921307, 1921308, 1921309, 1921310, 1921311, 1921312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	100	P/P	90 - 110
Fluoride	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78477

Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317, 1921318

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

Reference Method: SM 5310 B-00

Run ID: A78526

Included Lab Sample IDs: 1921313, 1921314, 1921315, 1921316, 1921317, 1921318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78557

Included Lab Sample IDs: 1921318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	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				0.0	
	Turbidity				1.59	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	106 102			4.41
	Ammonia-N	99.5	105 103			1.62
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	95.8 97.4			1.39
	Kjeldahl Nitrogen	103	95.3 100			4.24
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104 104			0.480
EPA 365.1 Rev. 2.0	Total-P	97.2	92.6 92.8			0.185
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	106	96.4 97.4			0.971
SM 2320 B-97	Total Alkalinity	102			0.141	
SM 4500 F-C-97	Fluoride	96.7	95.8 97.2			0.946
SM 5310 B-00	Organic Carbon	95.6	92.4 91.8			0.492

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1921319, 1921320, 1921321, 1921322, 1921323, 1921324
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1921313, 1921314, 1921315, 1921316, 1921317, 1921318

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	08/15/2017			08/15/2017 16:41	DeAsia Armster	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
EPA 350.1 Rev. 2.0	08/15/2017			08/16/2017	Sofia Elnemr	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 351.2 Rev. 2.0	08/15/2017	08/16/2017	Adrian Shelby	08/17/2017	Joseph Suarez	1921313, 1921314, 1921315, 1921316, 1921317
	08/15/2017	08/21/2017	Adrian Shelby	08/22/2017	Joseph Suarez	1921318
EPA 353.2 Rev. 2.0	08/15/2017			08/17/2017	Beverly Y. Sanders	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 365.1 Rev. 2.0	08/15/2017	08/16/2017	Sima Feizi	08/17/2017	Lipi Saha	1921313, 1921314, 1921315, 1921316, 1921317, 1921318
EPA 365.1 Rev. 2.0 dissolved	08/15/2017			08/15/2017 14:09	Ping Hua	1921319
	08/15/2017			08/15/2017 14:20	Ping Hua	1921320
	08/15/2017			08/15/2017 14:21	Ping Hua	1921321
	08/15/2017			08/15/2017 14:22	Ping Hua	1921322
	08/15/2017			08/15/2017 14:23	Ping Hua	1921323
	08/15/2017			08/15/2017 14:24	Ping Hua	1921324
SM 2320 B-97	08/15/2017			08/17/2017	Dale L. Simmons	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 2540 D-97	08/15/2017			08/16/2017	Yijie Li	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 4500 F-C-97	08/15/2017			08/16/2017	Dale L. Simmons	1921307, 1921308, 1921309, 1921310, 1921311, 1921312
SM 5310 B-00	08/15/2017			08/19/2017	Ping Hua	1921313, 1921314, 1921315, 1921316, 1921317, 1921318