

Chemical Analysis Report

SO-DIST-2017-03-21-01

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

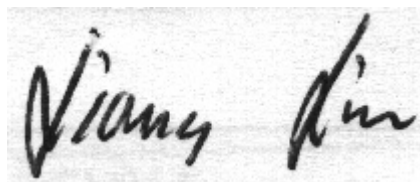
Event Description: **SMP: Bay of Florida**
Request ID: **RQ-2017-03-20-18**
Customer: **SO-DIST**
Project ID: **SMP**

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: Liang Lin, Environmental Administrator

Date Certified: 13-APR-2017 15:38

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: 8070 - North

Collection Date/Time: 03/20/2017 12:22

Field ID: G5SD032017-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881548	EPA 180.1 Rev. 2.0	Turbidity	20		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	139		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	19		mg/L	P322626	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P322244	
1881554	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P321928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322041	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P321944	
1881560	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321901	

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: 8069 - ENRE13

Collection Date/Time: 03/20/2017 12:52

Field ID: G5SD032017-3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881549	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	5	I	mg/L	P322626	
	SM 4500 F-C-97	Fluoride	1.1		mg F/L	P322244	
1881555	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P321928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P322041	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P321944	
1881561	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321901	

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: ENRE9 Harney River

Collection Date/Time: 03/20/2017 13:12

Field ID: G5SD032017-4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881550	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	266		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	5	I	mg/L	P322626	
	SM 4500 F-C-97	Fluoride	0.85		mg F/L	P322244	
1881556	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P321928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P322042	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P321944	
1881562	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P321901	

Field ID: G5SD032017-4

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: ENRE 14 Harney River

Collection Date/Time: 03/20/2017 13:32

Field ID: G5SD032017-5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881551	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	278		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	3	U	mg/L	P322626	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P322244	
1881557	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P321928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P322042	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P321944	
1881563	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P321901	

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: ENRE9 Lostmans Bay

Collection Date/Time: 03/20/2017 14:12

Field ID: G5SD032017-6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881552	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	179		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	3	U	mg/L	P322626	
	SM 4500 F-C-97	Fluoride	0.92		mg F/L	P322244	
1881558	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P321928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P322042	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P321944	
1881564	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321901	

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 12 Lostmans Bay

Collection Date/Time: 03/20/2017 14:22

Field ID: G5SD032017-7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881553	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P321896	
	SM 2320 B-97	Total Alkalinity	176		mg CaCO3/L	P322239	
	SM 2540 D-97	TSS	4	I	mg/L	P322626	
	SM 4500 F-C-97	Fluoride	0.89		mg F/L	P322244	
1881559	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P321915	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P321928	

Field ID: G5SD032017-7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881559	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P322042	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P321969	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P321944	
1881565	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321901	

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: P321896

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P321915

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P321928

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P322041

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P322042

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P321969

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P321901

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P322239

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

Reference Method: SM 2540 D-97
Batch ID: P322626

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P322244

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P321944

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: P321915

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321928

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: P322041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321969

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321969

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321901

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

Reference Method: SM 2320 B-97
Batch ID: P322239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P322244

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P321944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881554	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881575	Kjeldahl Nitrogen	100	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881513	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322042

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: P322042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881556	NO2NO3-N	109	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881520	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881564	O-Phosphate-P	99.0	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P322244

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881572	Fluoride	95.9	96.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P321944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881554	Organic Carbon	97.9	96.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P321896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881443	Turbidity	0.408	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881554	Ammonia-N	0.510	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881575	Kjeldahl Nitrogen	2.78	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881513	NO2NO3-N	0.971	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881556	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881520	Total-P	1.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881564	O-Phosphate-P	0.504	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P322239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881572	Total Alkalinity	0.0349	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P322244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881572	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P321944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881554	Organic Carbon	1.18	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75240

Included Lab Sample IDs: 1881548, 1881549, 1881550, 1881551, 1881552, 1881553

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75242

Included Lab Sample IDs: 1881560, 1881561, 1881562, 1881563, 1881564, 1881565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.1	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75245

Included Lab Sample IDs: 1881554, 1881555, 1881556, 1881557, 1881558, 1881559

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

Reference Method: SM 5310 B-00

Run ID: A75258

Included Lab Sample IDs: 1881554, 1881555, 1881556, 1881557, 1881558, 1881559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	93.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75295

Included Lab Sample IDs: 1881554, 1881555, 1881556, 1881557, 1881558, 1881559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75299

Included Lab Sample IDs: 1881554, 1881555, 1881556, 1881557, 1881558, 1881559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75304

Included Lab Sample IDs: 1881554, 1881555, 1881556, 1881557, 1881558, 1881559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.2	92.9	P/P	90 - 110
Kjeldahl Nitrogen	92.9	94.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A75378

Included Lab Sample IDs: 1881548, 1881549, 1881550, 1881551, 1881552, 1881553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75378

Included Lab Sample IDs: 1881548, 1881549, 1881550, 1881551, 1881552, 1881553

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.7	96.0	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				0.408	
EPA 350.1 Rev. 2.0	Ammonia-N	101	108 108			0.510
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	100 97.7			2.78
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102 104			0.971
	NO2NO3-N	104	109 109			0.0
EPA 365.1 Rev. 2.0	Total-P	105	102 103			1.23
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	99.0 99.5			0.504
SM 2320 B-97	Total Alkalinity	104			0.0349	
SM 4500 F-C-97	Fluoride	95.3	95.9 96.5			0.473
SM 5310 B-00	Organic Carbon	99.9	97.9 96.7			1.18

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1881560, 1881561, 1881562, 1881563, 1881564, 1881565
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1881548, 1881549, 1881550, 1881551, 1881552, 1881553

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1881554, 1881555, 1881556, 1881557, 1881558, 1881559

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	03/21/2017			03/21/2017 15:05	Sima Feizi	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
EPA 350.1 Rev. 2.0	03/21/2017			03/21/2017	Julie Michelle Frank	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 351.2 Rev. 2.0	03/21/2017	03/22/2017	Adrian Shelby	03/23/2017	Joseph Suarez	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 353.2 Rev. 2.0	03/21/2017			03/23/2017	Beverly Y. Sanders	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 365.1 Rev. 2.0	03/21/2017	03/22/2017	Vijayalakshmi Reddy	03/23/2017	Lipi Saha	1881554, 1881555, 1881556, 1881557, 1881558, 1881559
EPA 365.1 Rev. 2.0 dissolved	03/21/2017			03/21/2017 14:52	Julia Storbeck	1881564
	03/21/2017			03/21/2017 15:16	Julia Storbeck	1881560
	03/21/2017			03/21/2017 15:17	Julia Storbeck	1881561
	03/21/2017			03/21/2017 15:18	Julia Storbeck	1881562
	03/21/2017			03/21/2017 15:19	Julia Storbeck	1881563, 1881565
SM 2320 B-97	03/21/2017			03/24/2017	Dale L. Simmons	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
SM 2540 D-97	03/21/2017			03/24/2017	Yijie Li	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
SM 4500 F-C-97	03/21/2017			03/24/2017	Dale L. Simmons	1881548, 1881549, 1881550, 1881551, 1881552, 1881553
SM 5310 B-00	03/21/2017			03/22/2017	Christopher Armour	1881554, 1881555, 1881556, 1881557, 1881558, 1881559