

Chemical Analysis Report

SW-DIST-2017-02-24-01

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

Event Description: **SMP RUN 16**
Request ID: **RQ-2017-02-20-22**
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: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 20-MAR-2017 11:19



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: Blackwater Creek

Collection Date/Time: 02/23/2017 11:20

Field ID: G2SW0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875428	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P320492	
	EPA 300.0 Rev. 2.1	Chloride	54		mg Cl/L	P321344	
		Sulfate	45		mg SO4/L	P321346	
	SM 2120 B	Color (true)	44	A	PCU	P320481	
	SM 2320 B-97	Total Alkalinity	176		mg CaCO3/L	P320704	
	SM 2540 C-97	TDS	323		mg/L	P321092	
	SM 2540 D-97	TSS	4	I	mg/L	P321056	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P320894	
1875431	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P320792	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P320513	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P320823	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P320548	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P320603	
1875434	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P320495	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Turkey Creek

Collection Date/Time: 02/23/2017 12:55

Field ID: G2SW0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875429	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P320492	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P321344	
		Sulfate	41		mg SO4/L	P321346	
	SM 2120 B	Color (true)	86		PCU	P320481	
	SM 2320 B-97	Total Alkalinity	43		mg CaCO3/L	P320704	
	SM 2540 C-97	TDS	169		mg/L	P321092	
	SM 2540 D-97	TSS	38		mg/L	P321056	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P320894	
1875432	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P320792	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P320513	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.99		mg N/L	P320823	
	EPA 365.1 Rev. 2.0	Total-P	0.98		mg P/L	P320548	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P320603	
1875435	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.62		mg P/L	P320495	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: English Creek

Collection Date/Time: 02/23/2017 13:45

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1875430	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P320492	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P321344	
		Sulfate	22		mg SO4/L	P321346	
	SM 2120 B	Color (true)	73		PCU	P320481	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P320704	
	SM 2540 C-97	TDS	134	A	mg/L	P321093	
	SM 2540 D-97	TSS	13	A	mg/L	P321057	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P320894	
1875433	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P320792	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P320513	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.79		mg N/L	P320823	
	EPA 365.1 Rev. 2.0	Total-P	0.62		mg P/L	P320548	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P320603	
1875436	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.41		mg P/L	P320495	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P320492

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321344

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321346

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P320792

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P320513

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320823

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320548

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320495

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

Reference Method: SM 2120 B
Batch ID: P320481

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P320704

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

Reference Method: SM 2540 C-97
Batch ID: P321092

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P321093

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321056

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321057

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320603

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321344

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321346

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320792

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320513

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320823

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: P320548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320495

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 dissolved
Batch ID: P320495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.6		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P320704

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

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320603

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875689	Chloride	101		P	90 - 110
1875695	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875689	Sulfate	98.5		P	90 - 110
1875695	Sulfate	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875431	Kjeldahl Nitrogen	99.5	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875347	NO2NO3-N	101	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320548

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875431	Total-P	95.7	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P320495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875613	O-Phosphate-P	93.9	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P320894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872795	Fluoride	97.8	100	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P320603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1875431	Organic Carbon	96.1	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875374	Turbidity	5.79	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875689	Chloride	1.02	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P320792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875375	Ammonia-N	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P320513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875431	Kjeldahl Nitrogen	0.613	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875347	NO2NO3-N	1.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875431	Total-P	0.0982	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875613	O-Phosphate-P	1.64	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P320481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875428	Color (true)	0.0801	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P320704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875611	Total Alkalinity	0.447	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P321092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875374	TDS	7.97	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P321093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875430	TDS	5.97	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P321057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875430	TSS	9.52	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P320894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872795	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875431	Organic Carbon	1.21	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: SM 2120 B
Run ID: A74715
Included Lab Sample IDs: 1875428, 1875429, 1875430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.5	96.0	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74720
Included Lab Sample IDs: 1875428, 1875429, 1875430

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: A74721
Included Lab Sample IDs: 1875434, 1875435, 1875436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	98.3	P/P	90 - 110
O-Phosphate-P	98.3	96.9	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A74754
Included Lab Sample IDs: 1875431, 1875432, 1875433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74766
Included Lab Sample IDs: 1875431, 1875432, 1875433

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74766

Included Lab Sample IDs: 1875431, 1875432, 1875433

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74774

Included Lab Sample IDs: 1875431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	98.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74795

Included Lab Sample IDs: 1875428, 1875429, 1875430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74799

Included Lab Sample IDs: 1875432, 1875433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74822

Included Lab Sample IDs: 1875431, 1875432, 1875433

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74836

Included Lab Sample IDs: 1875431, 1875432, 1875433

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

Reference Method: SM 4500 F-C-97

Run ID: A74865

Included Lab Sample IDs: 1875428, 1875429, 1875430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.9	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1875428, 1875429, 1875430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.3	104	P/P	90 - 110
Sulfate	94.7	94.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

* 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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					5.79	
EPA 300.0 Rev. 2.1	Chloride	101	101	101		1.02	
	Sulfate	100	98.5	98.8			
EPA 350.1 Rev. 2.0	Ammonia-N	100					1.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	99.5	98.6			0.613
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	101	103			1.36
EPA 365.1 Rev. 2.0	Total-P	96.7	95.7	95.8			0.0982
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.6	93.9	96.4			1.64
SM 2120 B	Color (true)					0.0801	
SM 2320 B-97	Total Alkalinity	104				0.447	
SM 2540 C-97	TDS					7.97	
	TDS					5.97	
SM 2540 D-97	TSS					9.52	
SM 4500 F-C-97	Fluoride	97.0	97.8	100			1.42
SM 5310 B-00	Organic Carbon	97.9	96.1	97.8			1.21

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1875428, 1875429, 1875430
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1875428, 1875429, 1875430
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1875428, 1875429, 1875430
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1875431, 1875432, 1875433
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1875431, 1875432, 1875433
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1875431, 1875432, 1875433
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1875431, 1875432, 1875433
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1875434, 1875435, 1875436
SM 2120 B / E31780	True Color measured at 450 nm	1875428, 1875429, 1875430
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1875428, 1875429, 1875430
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1875428, 1875429, 1875430
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1875428, 1875429, 1875430
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1875428, 1875429, 1875430
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1875431, 1875432, 1875433

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	02/24/2017			02/24/2017 16:07	Sima Feizi	1875428, 1875429, 1875430
EPA 300.0 Rev. 2.1	02/24/2017			03/09/2017	Elisa J Lutz	1875428, 1875429, 1875430
EPA 350.1 Rev. 2.0	02/24/2017			03/01/2017	Sofia Elnemr	1875431, 1875432, 1875433
EPA 351.2 Rev. 2.0	02/24/2017	02/27/2017	Adrian Shelby	02/28/2017	Joseph Suarez	1875431
	02/24/2017	02/27/2017	Adrian Shelby	03/01/2017	Joseph Suarez	1875432, 1875433
EPA 353.2 Rev. 2.0	02/24/2017			03/02/2017	Beverly Y. Sanders	1875431, 1875432, 1875433
EPA 365.1 Rev. 2.0	02/24/2017	02/27/2017	Vijayalakshmi Reddy	02/27/2017	Lipi Saha	1875431, 1875432, 1875433
EPA 365.1 Rev. 2.0 dissolved	02/24/2017			02/24/2017 15:59	Virginia P. Brown	1875434
	02/24/2017			02/24/2017 16:00	Virginia P. Brown	1875435
	02/24/2017			02/24/2017 16:05	Virginia P. Brown	1875436
SM 2120 B	02/24/2017			02/24/2017 14:24	Julie Michelle Frank	1875428
	02/24/2017			02/24/2017 14:25	Julie Michelle Frank	1875429
	02/24/2017			02/24/2017 14:26	Julie Michelle Frank	1875430
SM 2320 B-97	02/24/2017			03/01/2017	Dale L. Simmons	1875428, 1875429, 1875430
SM 2540 C-97	02/24/2017			03/01/2017	Yijie Li	1875428, 1875429, 1875430
SM 2540 D-97	02/24/2017			03/01/2017	Yijie Li	1875428, 1875429, 1875430
SM 4500 F-C-97	02/24/2017			03/03/2017	Dale L. Simmons	1875428, 1875429, 1875430
SM 5310 B-00	02/24/2017			02/27/2017	Julie Michelle Frank	1875431, 1875432, 1875433