

Chemical Analysis Report

WQAP-2017-03-21-02

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

Event Description: **SMP 2016 Freshwater Kit A**
Request ID: **RQ-2017-03-20-29**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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Date Certified: 17-APR-2017 13:49



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: Ellaville Spring Vent

Collection Date/Time: 03/21/2017 10:27

Field ID: G1TLHR0027-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881831	EPA 180.1 Rev. 2.0	Turbidity	0.40		NTU	P322006	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P322280	
	SM 2120 B	Color (true)	40		PCU	P321975	
	SM 2320 B-97	Total Alkalinity	179		mg CaCO3/L	P322415	RPD
	SM 2540 C-97	TDS	213		mg/L	P322642	
	SM 2540 D-97	TSS	3	I	mg/L	P322621	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P322418	
1881835	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P321982	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P322014	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.46		mg N/L	P322116	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P322024	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P321943	
1881839	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P321903	

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: Alpha River Rise @ Suwannee River

Collection Date/Time: 03/21/2017 11:20

Field ID: G1TLHR0046-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881832	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P322007	
	EPA 300.0 Rev. 2.1	Chloride	9.6		mg Cl/L	P322280	
	SM 2120 B	Color (true)	120		PCU	P321975	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P322415	RPD
	SM 2540 C-97	TDS	150		mg/L	P322642	
	SM 2540 D-97	TSS	7	I	mg/L	P322621	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P322418	
1881836	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P321982	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P322014	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.56		mg N/L	P322117	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P322024	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P321943	
1881840	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P321903	

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: Alligator Creek @ CR NW 86th

Collection Date/Time: 03/21/2017 12:05

Field ID: G1TLHR0017-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881833	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P322007	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P322657	
	SM 2120 B	Color (true)	470		PCU	P321975	
	SM 2320 B-97	Total Alkalinity	4.8		mg CaCO3/L	P322415	RPD
	SM 2540 C-97	TDS	121		mg/L	P322642	

Field ID: G1TLHR0017-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881833	SM 2540 D-97	TSS	2	I	mg/L	P322621	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P322418	
1881837	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P321982	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P322014	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P322117	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P322025	
	SM 5310 B-00	Organic Carbon	47		mg C/L	P321943	
1881841	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P321903	

Ref. Method and Comment:

SM 2540 C-97: The result is consistent with the conductivity measured in the laboratory, 70 umhos/cm.

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

Sample Location: Middle of Lake Francis

Collection Date/Time: 03/21/2017 13:30

Field ID: G1TLHR0045-2017-01

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881834	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P322007	
	EPA 300.0 Rev. 2.1	Chloride	2.5		mg Cl/L	P322657	
	SM 2120 B	Color (true)	5.0	I	PCU	P321975	
	SM 2320 B-97	Total Alkalinity	95	AJ	mg CaCO3/L	P322415	RPD
	SM 2540 C-97	TDS	113	A	mg/L	P322643	
	SM 2540 D-97	TSS	3	I	mg/L	P322622	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P322418	
1881838	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P321982	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P322014	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P322117	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P322025	
	SM 5310 B-00	Organic Carbon	5.6		mg C/L	P321943	
1881842	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321903	

Ref. Method and Comment:

SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.

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: P322006

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P322007

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322280

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322657

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321982

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322014

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322116

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: P322117

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: P322024

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322025

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321903

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P321975

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P322415

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

Reference Method: SM 2540 C-97
Batch ID: P322642

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P322643

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322621

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322622

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P322418

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P321943

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: P322280

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322280

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322657

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321982

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: P322014

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: P322116

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322117

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: P322024

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322025

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P322415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P322418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P321943

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881424	Chloride	97.3		P	90 - 110
1881692	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881940	Chloride	99.0		P	90 - 110
1881946	Chloride	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881817	Ammonia-N	102	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881838	Kjeldahl Nitrogen	94.8	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881829	NO2NO3-N	98.0	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881931	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881817	Total-P	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881932	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881842	O-Phosphate-P	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P322418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881834	Fluoride	98.3	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P321943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881540	Organic Carbon	96.7	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881804	Turbidity	11.1	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881832	Turbidity	10.8	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881424	Chloride	0.0685	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881940	Chloride	0.254	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881817	Ammonia-N	2.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881838	Kjeldahl Nitrogen	0.387	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881829	NO2NO3-N	1.91	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881931	NO2NO3-N	1.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881817	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881932	Total-P	0.446	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881842	O-Phosphate-P	2.18	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P321975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881947	Color (true)	5.78	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P322415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881834	Total Alkalinity	5.51	Sample	F	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P322642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881438	TDS	0.881	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P322643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881834	TDS	3.54	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P322418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881834	Fluoride	0.548	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P321943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881540	Organic Carbon	0.896	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 365.1 Rev. 2.0 dissolved

Run ID: A75242

Included Lab Sample IDs: 1881839, 1881840, 1881841, 1881842

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.8	P/P	90 - 110
O-Phosphate-P	99.8	98.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A75258

Included Lab Sample IDs: 1881835, 1881836, 1881837, 1881838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.1	96.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A75274

Included Lab Sample IDs: 1881831, 1881832, 1881833, 1881834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.5	P/P	85 - 115
Color (true)	99.4	100	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75279

Included Lab Sample IDs: 1881835, 1881836, 1881837, 1881838

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75286

Included Lab Sample IDs: 1881831, 1881832, 1881833, 1881834

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 365.1 Rev. 2.0

Run ID: A75316

Included Lab Sample IDs: 1881836, 1881837

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.6	P/P	90 - 110
Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75324

Included Lab Sample IDs: 1881835, 1881836, 1881837, 1881838

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.1	106	P/P	90 - 110
Kjeldahl Nitrogen	97.2	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75325

Included Lab Sample IDs: 1881835, 1881836, 1881837, 1881838

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75331

Included Lab Sample IDs: 1881835, 1881838

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75396

Included Lab Sample IDs: 1881831, 1881832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75433

Included Lab Sample IDs: 1881831, 1881832, 1881833, 1881834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75433

Included Lab Sample IDs: 1881831, 1881832, 1881833, 1881834

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75488

Included Lab Sample IDs: 1881833, 1881834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	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				11.1	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					10.8	
EPA 300.0 Rev. 2.1	Chloride	101	97.3	98.2		0.0685	
	Chloride	100	99.0	101		0.254	
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	98.5			2.45
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	94.8	94.2			0.387
EPA 353.2 Rev. 2.0	NO2NO3-N	104	98.0	101			1.91
	NO2NO3-N	104	100	102			1.98
EPA 365.1 Rev. 2.0	Total-P	99.6	99.0	100			1.28
	Total-P	101	102	102			0.446
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.8	99.6	102			2.18
SM 2120 B	Color (true)					5.78	
SM 2320 B-97	Total Alkalinity	105				5.51	
SM 2540 C-97	TDS					0.881	
	TDS					3.54	
SM 4500 F-C-97	Fluoride	97.1	98.3	97.6			0.548
SM 5310 B-00	Organic Carbon	98.7	96.7	98.4			0.896

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1881831, 1881832, 1881833, 1881834
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1881831, 1881832, 1881833, 1881834
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1881835, 1881836, 1881837, 1881838
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1881835, 1881836, 1881837, 1881838
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1881835, 1881836, 1881837, 1881838
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1881835, 1881836, 1881837, 1881838
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1881839, 1881840, 1881841, 1881842
SM 2120 B / E31780	True Color measured at 450 nm	1881831, 1881832, 1881833, 1881834
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1881831, 1881832, 1881833, 1881834
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1881831, 1881832, 1881833, 1881834
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1881831, 1881832, 1881833, 1881834
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1881831, 1881832, 1881833, 1881834
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1881835, 1881836, 1881837, 1881838

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			03/22/2017 16:01	Blanca Fach	1881831, 1881832, 1881833, 1881834
EPA 300.0 Rev. 2.1	03/21/2017			03/28/2017	Ping Hua	1881831, 1881832
	03/21/2017			04/01/2017	Ping Hua	1881833, 1881834
EPA 350.1 Rev. 2.0	03/21/2017			03/22/2017	Julie Michelle Frank	1881835, 1881836, 1881837, 1881838
EPA 351.2 Rev. 2.0	03/21/2017	03/23/2017	Adrian Shelby	03/24/2017	Joseph Suarez	1881835, 1881836, 1881837, 1881838
EPA 353.2 Rev. 2.0	03/21/2017			03/24/2017	Beverly Y. Sanders	1881835, 1881836, 1881837, 1881838
EPA 365.1 Rev. 2.0	03/21/2017	03/23/2017	Adrian Shelby	03/23/2017	Lipi Saha	1881836, 1881837
	03/21/2017	03/23/2017	Adrian Shelby	03/24/2017	Lipi Saha	1881835, 1881838
EPA 365.1 Rev. 2.0 dissolved	03/21/2017			03/21/2017 15:59	Julia Storbeck	1881842
	03/21/2017			03/21/2017 16:12	Julia Storbeck	1881839
	03/21/2017			03/21/2017 16:13	Julia Storbeck	1881840
	03/21/2017			03/21/2017 16:14	Julia Storbeck	1881841
SM 2120 B	03/21/2017			03/22/2017 14:08	Julia Storbeck	1881831
	03/21/2017			03/22/2017 14:09	Julia Storbeck	1881832
	03/21/2017			03/22/2017 14:10	Julia Storbeck	1881834
	03/21/2017			03/22/2017 14:52	Julia Storbeck	1881833
SM 2320 B-97	03/21/2017			03/28/2017	Dale L. Simmons	1881831, 1881834
	03/21/2017			03/29/2017	Dale L. Simmons	1881832, 1881833
SM 2540 C-97	03/21/2017			03/24/2017	Yijie Li	1881831, 1881832, 1881833, 1881834
SM 2540 D-97	03/21/2017			03/24/2017	Yijie Li	1881831, 1881832, 1881833, 1881834
SM 4500 F-C-97	03/21/2017			03/28/2017	Dale L. Simmons	1881831, 1881834
	03/21/2017			03/29/2017	Dale L. Simmons	1881832, 1881833
SM 5310 B-00	03/21/2017			03/22/2017	Christopher Armour	1881835, 1881836, 1881837, 1881838