

Chemical Analysis Report

WQAP-2017-06-21-03

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

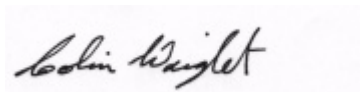
Event Description: **Run 6**
Request ID: **RQ-2017-06-19-28**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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Certified by: Colin Wright, Program Administrator

Date Certified: 12-JUL-2017 17:10

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light gray rectangular 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: MOON LAKE W

Collection Date/Time: 06/20/2017 09:40

Field ID: G5SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908021	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P327255	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P327407	
		Sulfate	2.0		mg SO4/L	P327410	
	SM 2120 B	Color (true)	21	A	PCU	P327260	
	SM 2320 B-97	Total Alkalinity	26		mg CaCO3/L	P327511	
	SM 2540 C-97	TDS	90		mg/L	P327626	
	SM 2540 D-97	TSS	2	I	mg/L	P327828	
	SM 4500 F-C-97	Fluoride	0.079	I	mg F/L	P327515	
1908025	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P327367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P327343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327476	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P327398	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P327587	
1908029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327265	

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.

Sample Location: PIERCE LAKE

Collection Date/Time: 06/20/2017 10:30

Field ID: G5SW0104

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908022	EPA 180.1 Rev. 2.0	Turbidity	1.5	A	NTU	P327256	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P327407	
		Sulfate	1.2		mg SO4/L	P327410	
	SM 2120 B	Color (true)	38		PCU	P327260	
	SM 2320 B-97	Total Alkalinity	3.8		mg CaCO3/L	P327511	
	SM 2540 C-97	TDS	38		mg/L	P327626	
	SM 2540 D-97	TSS	2	I	mg/L	P327828	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P327515	
1908026	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P327367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P327343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327476	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P327398	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P327587	
1908030	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327265	

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.

Sample Location: GREEN LAKE

Collection Date/Time: 06/20/2017 11:00

Field ID: G5SW0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908023	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P327256	

Field ID: G5SW0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908023	EPA 300.0 Rev. 2.1	Chloride	17	A	mg Cl/L	P327407	
		Sulfate	0.46	IA	mg SO4/L	P327410	
	SM 2120 B	Color (true)	29		PCU	P327260	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P327511	
	SM 2540 C-97	TDS	72		mg/L	P327626	
	SM 2540 D-97	TSS	3	I	mg/L	P327828	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P327515	
1908027	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P327367	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P327343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327476	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P327398	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P327587	
1908031	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327265	

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.

Sample Location: BIG VIENNA N

Collection Date/Time: 06/20/2017 12:15

Field ID: G5SW0113

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908024	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P327256	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P327407	
		Sulfate	16		mg SO4/L	P327410	
	SM 2120 B	Color (true)	25		PCU	P327260	
	SM 2320 B-97	Total Alkalinity	26	A	mg CaCO3/L	P327511	
	SM 2540 C-97	TDS	115	A	mg/L	P327626	
	SM 2540 D-97	TSS	4	IA	mg/L	P327828	
1908028	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P327515	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P327369	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P327343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P327476	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P327398	
1908032	SM 5310 B-00	Organic Carbon	12		mg C/L	P327587	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327265	

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.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P327255

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327256

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327407

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327410

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327369

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327343

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327476

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: P327398

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327265

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: P327260

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P327511

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

Reference Method: SM 2540 C-97
Batch ID: P327626

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327828

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327587

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: P327407

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327410

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327369

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: P327343

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327476

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: P327398

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327265

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

Reference Method: SM 2320 B-97
Batch ID: P327511

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

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P327587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907789	Chloride	95.5		P	90 - 110
1908023	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907789	Sulfate	94.0		P	90 - 110
1908023	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907861	Ammonia-N	100	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908028	Ammonia-N	101	91.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908026	Kjeldahl Nitrogen	97.1	95.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908027	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907882	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907900	O-Phosphate-P	93.5	95.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908024	Fluoride	95.8	97.6	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P327587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907883	Organic Carbon	93.0	93.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907690	Turbidity	0.500	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908022	Turbidity	10.7	Sample	P	0 - 15

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908023	Chloride	1.18	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907861	Ammonia-N	0.567	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908028	Ammonia-N	8.92	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908026	Kjeldahl Nitrogen	0.937	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908027	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907882	Total-P	0.819	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907900	O-Phosphate-P	1.90	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P327260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908021	Color (true)	2.03	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908024	Total Alkalinity	2.49	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P327626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908024	TDS	5.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P327515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908024	Fluoride	1.52	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907883	Organic Carbon	0.225	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 300.0 Rev. 2.1

Run ID: A77183

Included Lab Sample IDs: 1908021, 1908022, 1908023, 1908024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	99.8	P/P	90 - 110
Chloride	106	99.0	P/P	90 - 110
Chloride	99.0	105	P/P	90 - 110
Sulfate	106	99.1	P/P	90 - 110
Sulfate	98.6	99.6	P/P	90 - 110
Sulfate	99.6	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77249

Included Lab Sample IDs: 1908021, 1908022, 1908023, 1908024

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

Reference Method: SM 2120 B

Run ID: A77251

Included Lab Sample IDs: 1908021, 1908022, 1908023, 1908024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	109	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77252

Included Lab Sample IDs: 1908029, 1908030, 1908031, 1908032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77289

Included Lab Sample IDs: 1908025, 1908026, 1908027, 1908028

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77340

Included Lab Sample IDs: 1908025, 1908026, 1908027, 1908028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A77355

Included Lab Sample IDs: 1908021, 1908022, 1908023, 1908024

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

Reference Method: SM 4500 F-C-97

Run ID: A77355

Included Lab Sample IDs: 1908021, 1908022, 1908023, 1908024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77361

Included Lab Sample IDs: 1908025, 1908026, 1908027, 1908028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77379

Included Lab Sample IDs: 1908025, 1908026, 1908027, 1908028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	94.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77404

Included Lab Sample IDs: 1908025, 1908026, 1908027, 1908028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.9	97.7	P/P	90 - 110
Kjeldahl Nitrogen	97.7	97.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.500	
	Turbidity				10.7 RSD	
EPA 300.0 Rev. 2.1	Chloride	103	104 95.5		1.18	
	Sulfate	102	101 94.0			
EPA 350.1 Rev. 2.0	Ammonia-N	104	100 99.2			0.567
	Ammonia-N	101	101 91.7			8.92
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	97.1 95.7			0.937
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106 105			0.475
EPA 365.1 Rev. 2.0	Total-P	102	101 100			0.819
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	93.5 95.8			1.90

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2120 B	Color (true)					2.03	
SM 2320 B-97	Total Alkalinity	103				2.49	
SM 2540 C-97	TDS					5.22	
SM 4500 F-C-97	Fluoride	94.5	95.8	97.6			1.52
SM 5310 B-00	Organic Carbon	96.6	93.0	93.4			0.225

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1908021, 1908022, 1908023, 1908024
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1908021, 1908022, 1908023, 1908024
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1908021, 1908022, 1908023, 1908024
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1908025, 1908026, 1908027, 1908028
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1908025, 1908026, 1908027, 1908028
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1908025, 1908026, 1908027, 1908028
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1908025, 1908026, 1908027, 1908028
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1908029, 1908030, 1908031, 1908032
SM 2120 B / E31780	True Color measured at 450 nm	1908021, 1908022, 1908023, 1908024
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1908021, 1908022, 1908023, 1908024
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1908021, 1908022, 1908023, 1908024
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1908021, 1908022, 1908023, 1908024
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1908021, 1908022, 1908023, 1908024
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1908025, 1908026, 1908027, 1908028

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/21/2017			06/21/2017 15:22	DeAsia Armster	1908021, 1908022, 1908023, 1908024
EPA 300.0 Rev. 2.1	06/21/2017			06/23/2017	Julia Storbeck	1908021, 1908022, 1908023, 1908024
EPA 350.1 Rev. 2.0	06/21/2017			06/22/2017	Sofia Elnemr	1908025, 1908026, 1908027, 1908028
EPA 351.2 Rev. 2.0	06/21/2017	06/23/2017	Adrian Shelby	06/28/2017	Joseph Suarez	1908025, 1908026, 1908027, 1908028
EPA 353.2 Rev. 2.0	06/21/2017			06/26/2017	Beverly Y. Sanders	1908025, 1908026, 1908027, 1908028
EPA 365.1 Rev. 2.0	06/21/2017	06/23/2017	Vijayalakshmi Reddy	06/26/2017	Lipi Saha	1908025, 1908026, 1908027, 1908028
EPA 365.1 Rev. 2.0 dissolved	06/21/2017			06/21/2017 15:10	Ping Hua	1908029
	06/21/2017			06/21/2017 15:11	Ping Hua	1908030
	06/21/2017			06/21/2017 15:12	Ping Hua	1908031
	06/21/2017			06/21/2017 15:13	Ping Hua	1908032
SM 2120 B	06/21/2017			06/21/2017 15:36	Tanya Welborn	1908021
	06/21/2017			06/21/2017 15:37	Tanya Welborn	1908022
	06/21/2017			06/21/2017 15:38	Tanya Welborn	1908023, 1908024
SM 2320 B-97	06/21/2017			06/27/2017	Dale L. Simmons	1908021, 1908022, 1908023, 1908024
SM 2540 C-97	06/21/2017			06/23/2017	Yijie Li	1908021, 1908022, 1908023, 1908024
SM 2540 D-97	06/21/2017			06/23/2017	Yijie Li	1908021, 1908022, 1908023, 1908024
SM 4500 F-C-97	06/21/2017			06/27/2017	Dale L. Simmons	1908021, 1908022, 1908023, 1908024
SM 5310 B-00	06/21/2017			06/26/2017	Sofia Elnemr	1908025, 1908026, 1908027, 1908028