

Chemical Analysis Report

NW-DIST-2018-06-01-01

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

Event Description: **PACE RUN**
Request ID: **RQ-2018-05-28-61**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 26-JUN-2018 12:12

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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: Direct Runoff - Graveyard Branch @
 Tradewinds Dr.**

Collection Date/Time: 05/31/2018 11:30

Field ID: G4NW0176

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996798	EPA 180.1 Rev. 2.0	Turbidity	3.1	A	NTU	P346285	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P346444	
		Sulfate	5.5		mg SO4/L	P346446	
	SM 2120 B	Color (true)	26		PCU	P346280	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P346613	
	SM 2540 C-97	TDS	45		mg/L	P346792	
	SM 2540 D-97	TSS	2	I	mg/L	P346731	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346617	
1996801	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P347041	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P346653	
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P346676	
1996804	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346287	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: Dridglers Creek above Parkview Street

Collection Date/Time: 05/31/2018 12:00

Field ID: G4NW0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996799	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P346285	
	EPA 300.0 Rev. 2.1	Chloride	8.0		mg Cl/L	P346444	
		Sulfate	1.6		mg SO4/L	P346446	
	SM 2120 B	Color (true)	180		PCU	P346280	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	51		mg/L	P346793	
	SM 2540 D-97	TSS	2	I	mg/L	P346732	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346618	
1996802	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P347041	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P346653	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P346676	
1996805	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346287	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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: Sevenmile Creek upstream of AlderBrook Blvd. Collection Date/Time: 05/31/2018 13:00

Field ID: G4NW0345

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996800	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P346285	
	EPA 300.0 Rev. 2.1	Chloride	6.6		mg Cl/L	P346444	
		Sulfate	0.93		mg SO4/L	P346446	
	SM 2120 B	Color (true)	20		PCU	P346281	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P346614	
	SM 2540 C-97	TDS	24	I	mg/L	P346793	
	SM 2540 D-97	TSS	2	I	mg/L	P346732	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346618	
1996803	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P346696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	IJ	mg N/L	P347041	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P346506	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P346656	
	SM 5310 B-00	Organic Carbon	2.3		mg C/L	P346676	
1996806	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346287	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346285

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346444

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346446

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

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: P346653

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346287

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: P346280

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P346281

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346613

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

Reference Method: SM 2320 B-97
Batch ID: P346614

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

Reference Method: SM 2540 C-97
Batch ID: P346792

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P346793

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346731

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346732

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P346617

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346676

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: P346444

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346446

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

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: P347041

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346653

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

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: P346287

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

Reference Method: SM 2320 B-97
Batch ID: P346613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P346614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.7		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996799	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996593	Sulfate	104		P	90 - 110
1996799	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996801	Ammonia-N	93.7	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996803	Kjeldahl Nitrogen	77.6	77.2	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996801	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996801	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996803	Total-P	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996804	O-Phosphate-P	98.3	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P346617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997172	Fluoride	97.0	99.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996959	Fluoride	94.9	95.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996597	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996798	Turbidity	10.6	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996593	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996593	Sulfate	1.16	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996801	Ammonia-N	1.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996803	Kjeldahl Nitrogen	0.417	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996801	NO2NO3-N	0.242	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996801	Total-P	0.352	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996803	Total-P	2.67	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996804	O-Phosphate-P	0.911	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996687	Color (true)	0.828	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996820	Color (true)	0.608	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997172	Total Alkalinity	1.46	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P346614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Total Alkalinity	0.289	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P346792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996593	TDS	5.31	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P346793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996819	TDS	3.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P346617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997172	Fluoride	1.43	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P346618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996959	Fluoride	0.479	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996597	Organic Carbon	1.49	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: A84304

Included Lab Sample IDs: 1996798, 1996799, 1996800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	101	101	P/P	90 - 115
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84305

Included Lab Sample IDs: 1996798, 1996799, 1996800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84306

Included Lab Sample IDs: 1996804, 1996805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.9	P/P	90 - 110
O-Phosphate-P	98.4	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84307

Included Lab Sample IDs: 1996806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	95.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84339

Included Lab Sample IDs: 1996798, 1996799, 1996800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	102	104	P/P	90 - 110
Sulfate	101	104	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84398

Included Lab Sample IDs: 1996801, 1996802, 1996803

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

Reference Method: SM 2320 B-97

Run ID: A84458

Included Lab Sample IDs: 1996798, 1996799, 1996800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	101	P/P	90 - 110
Total Alkalinity	99.4	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A84458

Included Lab Sample IDs: 1996798, 1996799, 1996800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110
Fluoride	98.1	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84491

Included Lab Sample IDs: 1996801, 1996802, 1996803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84494

Included Lab Sample IDs: 1996801, 1996802, 1996803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.8	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84553

Included Lab Sample IDs: 1996801, 1996802, 1996803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	98.8	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84735

Included Lab Sample IDs: 1996801, 1996802, 1996803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	95.4	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				10.6	
EPA 300.0 Rev. 2.1	Chloride	103	102		1.59	
	Sulfate	101	104	102	1.16	
EPA 350.1 Rev. 2.0	Ammonia-N	100	93.7	97.0		1.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	77.6	77.2		0.417
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	99.5			0.242
EPA 365.1 Rev. 2.0	Total-P	102	103	103		0.352
	Total-P	102	105	102		2.67
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	98.3	99.2		0.911
SM 2120 B	Color (true)				0.828	
	Color (true)				0.608	
SM 2320 B-97	Total Alkalinity	102			1.46	
	Total Alkalinity	102			0.289	
SM 2540 C-97	TDS				5.31	
	TDS				3.51	
SM 4500 F-C-97	Fluoride	94.7	97.0	99.0		1.43
	Fluoride	96.0	94.9	95.4		0.479
SM 5310 B-00	Organic Carbon	101	103			1.49

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1996798, 1996799, 1996800
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1996798, 1996799, 1996800
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1996798, 1996799, 1996800
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1996801, 1996802, 1996803
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1996801, 1996802, 1996803
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1996801, 1996802, 1996803
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1996801, 1996802, 1996803
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1996804, 1996805, 1996806
SM 2120 B / E31780	True Color measured at 450 nm	1996798, 1996799, 1996800
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1996798, 1996799, 1996800
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1996798, 1996799, 1996800
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1996798, 1996799, 1996800
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1996798, 1996799, 1996800
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1996801, 1996802, 1996803

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	06/01/2018			06/01/2018 16:16	Julia Storbeck	1996798, 1996799, 1996800
EPA 300.0 Rev. 2.1	06/01/2018			06/05/2018 19:58	Lipi Saha	1996799
	06/01/2018			06/05/2018 22:21	Lipi Saha	1996798
	06/01/2018			06/05/2018 22:33	Lipi Saha	1996800
EPA 350.1 Rev. 2.0	06/01/2018			06/11/2018 15:08	Julia Storbeck	1996801
	06/01/2018			06/11/2018 15:13	Julia Storbeck	1996802
	06/01/2018			06/11/2018 15:14	Julia Storbeck	1996803
EPA 351.2 Rev. 2.0	06/01/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:35	Joseph Suarez	1996801
	06/01/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:37	Joseph Suarez	1996802
	06/01/2018	06/18/2018 15:30	Adrian Shelby	06/20/2018 11:38	Joseph Suarez	1996803
EPA 353.2 Rev. 2.0	06/01/2018			06/06/2018 15:02	Lauren Bottorf	1996801
	06/01/2018			06/06/2018 15:11	Lauren Bottorf	1996802
	06/01/2018			06/06/2018 17:27	Lauren Bottorf	1996803
EPA 365.1 Rev. 2.0	06/01/2018	06/11/2018 12:30	Adrian Shelby	06/13/2018 12:03	Beverly Y. Sanders	1996801
	06/01/2018	06/11/2018 12:30	Adrian Shelby	06/13/2018 12:04	Beverly Y. Sanders	1996802
	06/01/2018	06/11/2018 12:30	Adrian Shelby	06/13/2018 12:31	Beverly Y. Sanders	1996803
EPA 365.1 Rev. 2.0 dissolved	06/01/2018			06/01/2018 16:03	Megan Treadwell	1996804
	06/01/2018			06/01/2018 16:30	Megan Treadwell	1996805
	06/01/2018			06/01/2018 17:53	Megan Treadwell	1996806
SM 2120 B	06/01/2018			06/01/2018 15:42	Tanya Welborn	1996798
	06/01/2018			06/01/2018 15:46	Tanya Welborn	1996800
	06/01/2018			06/01/2018 15:59	Tanya Welborn	1996799
SM 2320 B-97	06/01/2018			06/07/2018 05:04	Dale L. Simmons	1996798
	06/01/2018			06/07/2018 06:53	Dale L. Simmons	1996799
	06/01/2018			06/07/2018 07:02	Dale L. Simmons	1996800
SM 2540 C-97	06/01/2018			06/06/2018 15:03	Yijie Li	1996798, 1996799, 1996800
SM 2540 D-97	06/01/2018			06/06/2018 15:03	Yijie Li	1996798, 1996799, 1996800
SM 4500 F-C-97	06/01/2018			06/07/2018 05:04	Dale L. Simmons	1996798
	06/01/2018			06/07/2018 06:53	Dale L. Simmons	1996799
	06/01/2018			06/07/2018 07:02	Dale L. Simmons	1996800
SM 5310 B-00	06/01/2018			06/09/2018 00:28	Megan Treadwell	1996801
	06/01/2018			06/09/2018 00:40	Megan Treadwell	1996802
	06/01/2018			06/09/2018 00:53	Megan Treadwell	1996803