

Chemical Analysis Report

SE-DIST-2018-09-07-01

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

Event Description: **SMP- Taco Run**
Request ID: **RQ-2018-08-27-38**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-SEP-2018 09:39

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Padgett Branch @ 441

Collection Date/Time: 09/06/2018 12:00

Field ID: G3SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023177	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P351325	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P351984	
		Sulfate	0.62		mg SO4/L	P351988	
	SM 2120 B	Color (true)	290		PCU	P351300	
	SM 2320 B-97	Total Alkalinity	9.2		mg CaCO3/L	P351534	
	SM 2540 C-97	TDS	100		mg/L	P351797	
	SM 2540 D-97	TSS	4	I	mg/L	P351730	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P351537	
2023178	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P351607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P351494	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351587	
	EPA 365.1 Rev. 2.0	Total-P	0.062		mg P/L	P351397	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P351875	
2023179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P351305	

Sample Location: Sweetwater Branch @ 441

Collection Date/Time: 09/06/2018 12:40

Field ID: G3SE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023174	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P351325	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P351984	
		Sulfate	2.2	A	mg SO4/L	P351988	
	SM 2120 B	Color (true)	200	A	PCU	P351301	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P351534	
	SM 2540 C-97	TDS	102		mg/L	P351797	
	SM 2540 D-97	TSS	4	I	mg/L	P351730	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P351537	
2023175	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P351607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P351494	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P351587	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P351397	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P352043	
2023176	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P351305	

Sample Location: Sweetwater Branch @ 441

Collection Date/Time: 09/06/2018 12:45

Field ID: G3SE0025_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023180	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P351325	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P351984	
		Sulfate	2.2		mg SO4/L	P351988	
	SM 2120 B	Color (true)	200	A	PCU	P351300	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P351534	
	SM 2540 C-97	TDS	104		mg/L	P351797	
	SM 2540 D-97	TSS	4	I	mg/L	P351730	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P351537	
2023181	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P351607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P351494	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P351587	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P351473	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P351875	
2023182	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P351305	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351325

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

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: P351300

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P351301

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351534

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

Reference Method: SM 2540 C-97
Batch ID: P351797

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351730

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351875

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

Reference Method: SM 5310 B-00
Batch ID: P352043

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: P351984

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P351300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P351301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P352043

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: P351984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023174	Chloride	98.2		P	90 - 110
2023721	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023174	Sulfate	98.3		P	90 - 110
2023721	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023164	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023167	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023166	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023165	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023230	Total-P	96.4	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023173	O-Phosphate-P	98.0	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023223	Fluoride	98.2	98.2	P/P	91 - 105

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P351875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023178	Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P352043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023023	Organic Carbon	99.4	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023163	Turbidity	2.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023174	Chloride	0.135	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023174	Sulfate	0.0848	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023164	Ammonia-N	2.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023167	Kjeldahl Nitrogen	0.812	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023166	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023165	Total-P	0.359	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023230	Total-P	2.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023173	O-Phosphate-P	0.509	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023180	Color (true)	1.77	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023174	Color (true)	0.677	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Total Alkalinity	1.14	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023579	TDS	0.749	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P351730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023579	TSS	7.69	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023178	Organic Carbon	0.433	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P352043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023023	Organic Carbon	0.996	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: A86351

Included Lab Sample IDs: 2023174, 2023177, 2023180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86353

Included Lab Sample IDs: 2023176, 2023179, 2023182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	102	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86366

Included Lab Sample IDs: 2023174, 2023177, 2023180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86427

Included Lab Sample IDs: 2023175, 2023178

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

Reference Method: SM 2320 B-97

Run ID: A86448

Included Lab Sample IDs: 2023174, 2023177, 2023180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86448

Included Lab Sample IDs: 2023174, 2023177, 2023180

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86451

Included Lab Sample IDs: 2023181

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86460

Included Lab Sample IDs: 2023175, 2023178, 2023181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86462

Included Lab Sample IDs: 2023175, 2023178, 2023181

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86508

Included Lab Sample IDs: 2023175, 2023178, 2023181

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86566

Included Lab Sample IDs: 2023174, 2023177, 2023180

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

Reference Method: SM 5310 B-00

Run ID: A86572

Included Lab Sample IDs: 2023178, 2023181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86629

Included Lab Sample IDs: 2023175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	99.2	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.21	
EPA 300.0 Rev. 2.1	Chloride	100	98.2	99.5		0.135	
	Sulfate	99.2	98.3	98.1		0.0848	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	98.2	101			2.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9	105	107			0.812
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	104	104			0.962
EPA 365.1 Rev. 2.0	Total-P	101	102	103			0.359
	Total-P	99.1	96.4	99.3			2.37
EPA 365.1 Rev. 2.0 dissolved SM 2120 B	O-Phosphate-P	98.9	98.0	98.5			0.509
	Color (true)	99.6				1.77	
	Color (true)	99.7				0.677	
SM 2320 B-97	Total Alkalinity	103				1.14	
SM 2540 C-97	TDS					0.749	
SM 2540 D-97	TSS					7.69	
SM 4500 F-C-97	Fluoride	99.2	98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	97.1	100				0.433
	Organic Carbon	101	99.4	101			0.996

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2023174, 2023177, 2023180
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2023174, 2023177, 2023180
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2023174, 2023177, 2023180
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2023175, 2023178, 2023181
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2023175, 2023178, 2023181
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2023175, 2023178, 2023181
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2023175, 2023178, 2023181
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2023176, 2023179, 2023182
SM 2120 B / E31780	True Color measured at 450 nm	2023174, 2023177, 2023180
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2023174, 2023177, 2023180
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2023174, 2023177, 2023180
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2023174, 2023177, 2023180
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2023174, 2023177, 2023180
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2023175, 2023178, 2023181

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	09/07/2018			09/07/2018 16:38	Megan Treadwell	2023174, 2023177, 2023180
EPA 300.0 Rev. 2.1	09/07/2018			09/18/2018 15:55	Lipi Saha	2023174
	09/07/2018			09/18/2018 17:19	Lipi Saha	2023177
	09/07/2018			09/18/2018 17:55	Lipi Saha	2023180
EPA 350.1 Rev. 2.0	09/07/2018			09/12/2018 13:38	Ping Hua	2023175
	09/07/2018			09/12/2018 13:39	Ping Hua	2023178
	09/07/2018			09/12/2018 13:47	Ping Hua	2023181
EPA 351.2 Rev. 2.0	09/07/2018	09/12/2018 10:45	Adrian Shelby	09/14/2018 18:12	Joseph Suarez	2023175
	09/07/2018	09/12/2018 10:45	Adrian Shelby	09/14/2018 18:13	Joseph Suarez	2023178
	09/07/2018	09/12/2018 10:45	Adrian Shelby	09/14/2018 18:15	Joseph Suarez	2023181
EPA 353.2 Rev. 2.0	09/07/2018			09/13/2018 12:47	Lauren Bottorf	2023175
	09/07/2018			09/13/2018 12:48	Lauren Bottorf	2023181
	09/07/2018			09/13/2018 12:52	Lauren Bottorf	2023178
EPA 365.1 Rev. 2.0	09/07/2018	09/11/2018 12:05	Sima Feizi	09/12/2018 09:58	Beverly Y. Sanders	2023175
	09/07/2018	09/11/2018 12:05	Sima Feizi	09/12/2018 09:59	Beverly Y. Sanders	2023178
	09/07/2018	09/12/2018 12:10	Sima Feizi	09/13/2018 08:13	Beverly Y. Sanders	2023181
EPA 365.1 Rev. 2.0 dissolved	09/07/2018			09/07/2018 15:48	Julia Storbeck	2023176
	09/07/2018			09/07/2018 15:49	Julia Storbeck	2023182
	09/07/2018			09/07/2018 16:00	Julia Storbeck	2023179
SM 2120 B	09/07/2018			09/07/2018 15:50	DeAsia Armster	2023177
	09/07/2018			09/07/2018 15:51	DeAsia Armster	2023180
	09/07/2018			09/07/2018 15:53	DeAsia Armster	2023174
SM 2320 B-97	09/07/2018			09/13/2018 05:11	Dale L. Simmons	2023174
	09/07/2018			09/13/2018 05:21	Dale L. Simmons	2023177
	09/07/2018			09/13/2018 05:31	Dale L. Simmons	2023180
SM 2540 C-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023174, 2023177, 2023180
SM 2540 D-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023174, 2023177, 2023180
SM 4500 F-C-97	09/07/2018			09/13/2018 05:11	Dale L. Simmons	2023174
	09/07/2018			09/13/2018 05:21	Dale L. Simmons	2023177
	09/07/2018			09/13/2018 05:31	Dale L. Simmons	2023180
SM 5310 B-00	09/07/2018			09/17/2018 08:21	Megan Treadwell	2023178
	09/07/2018			09/17/2018 09:10	Megan Treadwell	2023181
	09/07/2018			09/20/2018 06:51	Megan Treadwell	2023175