

Chemical Analysis Report

NW-DIST-2018-11-28-02

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

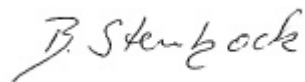
Event Description: **Escambia River Run**
Request ID: **RQ-2018-11-19-12**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 18-DEC-2018 16:29



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: Dead River upstream of Yellow River

Collection Date/Time: 11/26/2018 11:00

Field ID: G4NW0408

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044028	EPA 180.1 Rev. 2.0	Turbidity	7.7	Q	NTU	P355268	
	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P355688	
		Sulfate	1.0		mg SO4/L	P355690	
	SM 2120 B	Color (true)	59	Q	PCU	P355254	
	SM 2320 B-97	Total Alkalinity	7.6		mg CaCO3/L	P355560	
	SM 2540 C-97	TDS	21	I	mg/L	P355726	
	SM 2540 D-97	TSS	4	I	mg/L	P355820	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355563	
2044031	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P355446	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P355312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P355335	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P355617	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P355514	
2044034	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	IQ	mg P/L	P355298	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt.

SM 2120 B: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

Sample Location: Dead River upstream of Yellow River

Collection Date/Time: 11/26/2018 11:05

Field ID: G4NW0408_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044029	EPA 180.1 Rev. 2.0	Turbidity	7.6	Q	NTU	P355268	
	EPA 300.0 Rev. 2.1	Chloride	3.4		mg Cl/L	P355688	
		Sulfate	1.0		mg SO4/L	P355690	
	SM 2120 B	Color (true)	58	Q	PCU	P355254	
	SM 2320 B-97	Total Alkalinity	7.4		mg CaCO3/L	P355560	
	SM 2540 C-97	TDS	23	I	mg/L	P355727	
	SM 2540 D-97	TSS	4	I	mg/L	P355821	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355563	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P355446	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P355312	
2044032	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P355335	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P355617	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P355514	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P355298	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt.

SM 2120 B: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

Sample Location: Dead River upstream of Yellow River

Collection Date/Time: 11/26/2018 11:10

Field ID: BLANK_11262018

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044037	EPA 180.1 Rev. 2.0	Turbidity	0.10	IQ	NTU	P355268	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P355688	
		Sulfate	0.20	U	mg SO4/L	P355690	
	SM 2120 B	Color (true)	2.5	UQ	PCU	P355254	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P355560	
	SM 2540 C-97	TDS	15	U	mg/L	P355725	
	SM 2540 D-97	TSS	2	U	mg/L	P355819	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355563	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P355446	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P355312	
2044038	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P355335	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P355617	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P355514	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	UQ	mg P/L	P355298	
	dissolved						

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired prior to receipt. The result was confirmed on 11/28/2018.

SM 2120 B: The sample expired prior to receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired prior to receipt.

Sample Location: Boiling Creek at Boat Launch

Collection Date/Time: 11/26/2018 11:25

Field ID: G4NW0385

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044030	EPA 180.1 Rev. 2.0	Turbidity	1.2	Q	NTU	P355268	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P355688	
		Sulfate	0.61		mg SO4/L	P355690	
	SM 2120 B	Color (true)	38	AQ	PCU	P355254	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P355560	
	SM 2540 C-97	TDS	15	U	mg/L	P355727	
	SM 2540 D-97	TSS	2	I	mg/L	P355821	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P355563	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P355447	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P355312	
2044033	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P355335	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P355617	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P355514	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	UQ	mg P/L	P355298	
	dissolved						

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

SM 2120 B: The sample expired upon receipt.

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355268

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355688

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355690

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355446

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355447

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355312

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355335

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: P355617

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355298

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: P355254

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P355560

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

Reference Method: SM 2540 C-97
Batch ID: P355725

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P355726

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P355727

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355819

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355820

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355821

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P355514

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: P355688

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355690

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355446

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355447

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: P355312

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355617

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: P355298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P355254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P355560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044067	Chloride	99.8		P	90 - 110
2044319	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044067	Sulfate	100		P	90 - 110
2044319	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044031	Ammonia-N	105	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044033	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044032	Kjeldahl Nitrogen	98.0	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043998	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044031	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2044036	O-Phosphate-P	98.9	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043988	Fluoride	100	99.7	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P355514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043995	Organic Carbon	98.2	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044175	Turbidity	2.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044067	Chloride	0.205	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044067	Sulfate	0.600	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044031	Ammonia-N	1.79	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044033	Ammonia-N	0.767	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044032	Kjeldahl Nitrogen	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043998	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044031	Total-P	0.383	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044036	O-Phosphate-P	0.906	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P355254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044030	Color (true)	1.30	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P355560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043988	Total Alkalinity	0.379	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P355725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043892	TDS	2.18	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P355726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043941	TDS	3.39	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P355727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044067	TDS	3.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043988	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043995	Organic Carbon	0.556	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: SM 2120 B

Run ID: A88016

Included Lab Sample IDs: 2044028, 2044029, 2044030, 2044037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88018

Included Lab Sample IDs: 2044028, 2044029, 2044030, 2044037

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88035

Included Lab Sample IDs: 2044034, 2044035, 2044036, 2044039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	98.4	P/P	90 - 110
O-Phosphate-P	99.6	99.3	P/P	90 - 110
O-Phosphate-P	99.8	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88043

Included Lab Sample IDs: 2044031, 2044032, 2044033, 2044038

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88056

Included Lab Sample IDs: 2044031, 2044032, 2044033, 2044038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88077

Included Lab Sample IDs: 2044031, 2044032, 2044033, 2044038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110
Ammonia-N	101	100	P/P	90 - 110
Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88113

Included Lab Sample IDs: 2044028, 2044029, 2044030, 2044037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A88116

Included Lab Sample IDs: 2044031, 2044032, 2044033, 2044038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	93.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A88134

Included Lab Sample IDs: 2044028, 2044029, 2044030, 2044037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88134

Included Lab Sample IDs: 2044028, 2044029, 2044030, 2044037

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: A88189

Included Lab Sample IDs: 2044031, 2044032, 2044033, 2044038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	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					2.46	
EPA 300.0 Rev. 2.1	Chloride	102	99.8	100		0.205	
	Sulfate	101	100	101		0.600	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	105	103			1.79
	Ammonia-N	101	104	104			0.767
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	98.0	94.9			2.61
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	101			0.484
EPA 365.1 Rev. 2.0	Total-P	101	101	100			0.383
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	98.9	99.8			0.906
SM 2120 B	Color (true)	104				1.30	
SM 2320 B-97	Total Alkalinity	98.7				0.379	
SM 2540 C-97	TDS					2.18	
	TDS					3.39	
	TDS					3.19	
SM 4500 F-C-97	Fluoride	97.2	100	99.7			0.470
SM 5310 B-00	Organic Carbon	98.0	98.2	97.4			0.556

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2044028, 2044029, 2044030, 2044037
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2044028, 2044029, 2044030, 2044037
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2044028, 2044029, 2044030, 2044037
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2044031, 2044032, 2044033, 2044038
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2044031, 2044032, 2044033, 2044038
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2044031, 2044032, 2044033, 2044038
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2044031, 2044032, 2044033, 2044038
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2044034, 2044035, 2044036, 2044039
SM 2120 B / E31780	True Color measured at 450 nm	2044028, 2044029, 2044030, 2044037
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2044028, 2044029, 2044030, 2044037
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2044028, 2044029, 2044030, 2044037
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2044028, 2044029, 2044030, 2044037
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2044028, 2044029, 2044030, 2044037
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2044031, 2044032, 2044033, 2044038

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	11/28/2018			11/28/2018 15:24	Megan Treadwell	2044028, 2044029, 2044030, 2044037
EPA 300.0 Rev. 2.1	11/28/2018			12/04/2018 22:59	Lipi Saha	2044028
	11/28/2018			12/04/2018 23:11	Lipi Saha	2044029
	11/28/2018			12/04/2018 23:23	Lipi Saha	2044030
	11/28/2018			12/04/2018 23:59	Lipi Saha	2044037
EPA 350.1 Rev. 2.0	11/28/2018			11/30/2018 13:36	Ping Hua	2044031
	11/28/2018			11/30/2018 13:41	Ping Hua	2044032
	11/28/2018			11/30/2018 13:48	Ping Hua	2044038
	11/28/2018			11/30/2018 14:11	Ping Hua	2044033
EPA 351.2 Rev. 2.0	11/28/2018	11/29/2018 13:00	Adrian Shelby	11/30/2018 10:23	Joseph Suarez	2044031
	11/28/2018	11/29/2018 13:00	Adrian Shelby	11/30/2018 10:25	Joseph Suarez	2044032
	11/28/2018	11/29/2018 13:00	Adrian Shelby	11/30/2018 10:30	Joseph Suarez	2044033
	11/28/2018	11/29/2018 13:00	Adrian Shelby	11/30/2018 10:31	Joseph Suarez	2044038
EPA 353.2 Rev. 2.0	11/28/2018			11/29/2018 14:17	Lauren Bottorf	2044038
	11/28/2018			11/29/2018 14:20	Lauren Bottorf	2044031
	11/28/2018			11/29/2018 14:21	Lauren Bottorf	2044032
	11/28/2018			11/29/2018 14:22	Lauren Bottorf	2044033
EPA 365.1 Rev. 2.0	11/28/2018	12/05/2018 11:30	Sima Feizi	12/06/2018 10:07	Beverly Y. Sanders	2044031
	11/28/2018	12/05/2018 11:30	Sima Feizi	12/06/2018 10:08	Beverly Y. Sanders	2044032
	11/28/2018	12/05/2018 11:30	Sima Feizi	12/06/2018 10:09	Beverly Y. Sanders	2044033
	11/28/2018	12/05/2018 11:30	Sima Feizi	12/06/2018 10:10	Beverly Y. Sanders	2044038
EPA 365.1 Rev. 2.0 dissolved	11/28/2018			11/28/2018 16:50	Jhamieka S. Greenwood	2044036
	11/28/2018			11/28/2018 17:39	Jhamieka S. Greenwood	2044039
	11/28/2018			11/28/2018 18:21	Jhamieka S. Greenwood	2044034
	11/28/2018			11/28/2018 18:22	Jhamieka S. Greenwood	2044035
SM 2120 B	11/28/2018			11/28/2018 14:31	Chelsea Hernandez	2044028
	11/28/2018			11/28/2018 14:32	Chelsea Hernandez	2044029
	11/28/2018			11/28/2018 14:34	Chelsea Hernandez	2044030
	11/28/2018			11/28/2018 14:35	Chelsea Hernandez	2044037
SM 2320 B-97	11/28/2018			12/04/2018 06:43	Dale L. Simmons	2044028
	11/28/2018			12/04/2018 06:55	Dale L. Simmons	2044029
	11/28/2018			12/04/2018 07:07	Dale L. Simmons	2044030
	11/28/2018			12/04/2018 07:19	Dale L. Simmons	2044037
SM 2540 C-97	11/28/2018			11/30/2018 16:02	Yijie Li	2044028, 2044029, 2044030, 2044037
SM 2540 D-97	11/28/2018			11/30/2018 16:02	Yijie Li	2044028, 2044029, 2044030, 2044037
SM 4500 F-C-97	11/28/2018			12/04/2018 06:43	Dale L. Simmons	2044028
	11/28/2018			12/04/2018 06:55	Dale L. Simmons	2044029
	11/28/2018			12/04/2018 07:07	Dale L. Simmons	2044030
	11/28/2018			12/04/2018 07:19	Dale L. Simmons	2044037
SM 5310 B-00	11/28/2018			12/03/2018 05:21	Megan Treadwell	2044031

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	11/28/2018			12/03/2018 05:35	Megan Treadwell	2044032
	11/28/2018			12/03/2018 05:47	Megan Treadwell	2044033
	11/28/2018			12/03/2018 06:00	Megan Treadwell	2044038