

Chemical Analysis Report

NE-DIST-2021-08-26-01

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

Event Description: **Pellicer Creek and Tribs**

Request ID: **RQ-2021-08-16-14**

Customer: **NE-DIST**

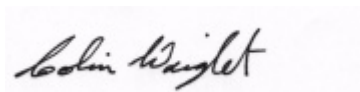
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 21-SEP-2021 11:14

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Pellicer Creek above Schoolhouse BR

Collection Date/Time: 08/25/2021 09:00

Field ID: G5NE0598

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272141	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P403042	
	EPA 300.0 Rev. 2.1	Chloride	19	A	mg Cl/L	P403342	
		Sulfate	8.5	A	mg SO4/L	P403343	
	SM 2120 B-2011	Color (true)	370		PCU	P403045	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P403123	
	SM 2540 C-2011	TDS	186		mg/L	P403401	
	SM 2540 D-2011	TSS	9	I	mg/L	P403394	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P403125	
2272146	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P403209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P403314	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P403184	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P403140	
	SM 5310 B-2011	Organic Carbon	33		mg C/L	P403344	
2272151	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P403037	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: SchoolHouse Branch at RR Tracks

Collection Date/Time: 08/25/2021 09:15

Field ID: G5NE0599

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272142	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P403042	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P403342	
		Sulfate	5.1		mg SO4/L	P403343	
	SM 2120 B-2011	Color (true)	200		PCU	P403045	
	SM 2320 B-2011	Total Alkalinity	77		mg CaCO3/L	P403123	
	SM 2540 C-2011	TDS	140		mg/L	P403401	
	SM 2540 D-2011	TSS	4	I	mg/L	P403394	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P403125	
2272147	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P403209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P403314	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P403184	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P403141	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P403548	
2272152	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P403037	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Stevens Branch S Of Pelicer Cemetery Off CR 204 **Collection Date/Time: 08/25/2021 10:15**

Field ID: 27010070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272143	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P403042	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P403342	
		Sulfate	12		mg SO4/L	P403343	
	SM 2120 B-2011	Color (true)	520		PCU	P403045	
	SM 2320 B-2011	Total Alkalinity	66		mg CaCO3/L	P403123	
	SM 2540 C-2011	TDS	193		mg/L	P403401	
	SM 2540 D-2011	TSS	7	I	mg/L	P403394	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P403125	
2272148	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P403209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P403410	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P403184	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P403141	
	SM 5310 B-2011	Organic Carbon	44		mg C/L	P403344	
2272153	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P403037	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Pringle BR Unnamed Dirt Rd 0.5mi S Dave BR Collection Date/Time: 08/25/2021 10:35

Field ID: 27010203

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272144	EPA 180.1 Rev. 2.0	Turbidity	5.7	A	NTU	P403043	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P403342	
		Sulfate	1.4		mg SO4/L	P403343	
	SM 2120 B-2011	Color (true)	170		PCU	P403045	
	SM 2320 B-2011	Total Alkalinity	104		mg CaCO3/L	P403123	
	SM 2540 C-2011	TDS	186	A	mg/L	P403401	
	SM 2540 D-2011	TSS	2	IA	mg/L	P403394	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P403125	
2272149	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P403321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P403314	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P403184	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P403141	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P403548	
2272154	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P403037	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Cracker Branch 1.3mi N Cr 2046

Collection Date/Time: 08/25/2021 11:15

Field ID: 27010063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272145	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P403043	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P403342	
		Sulfate	1.0		mg SO4/L	P403343	
	SM 2120 B-2011	Color (true)	870		PCU	P403045	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P403123	
	SM 2540 C-2011	TDS	161		mg/L	P403401	
	SM 2540 D-2011	TSS	4	I	mg/L	P403394	
	SM 4500 F-C-2011	Fluoride	0.049	I	mg F/L	P403125	
2272150	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P403321	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P403411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403184	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P403141	
	SM 5310 B-2011	Organic Carbon	62		mg C/L	P403344	
2272155	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041		mg P/L	P403038	

Ref. Method and Comment:

SM 2540 D-2011: 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: P403042

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403043

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403342

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403343

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403209

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403321

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403314

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403140

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403037

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403038

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

Reference Method: SM 2120 B-2011
Batch ID: P403045

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P403123

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P403401

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403394

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P403125

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403344

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

Reference Method: SM 5310 B-2011
Batch ID: P403548

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: P403342

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403343

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403209

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403321

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403314

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403410

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403184

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: P403140

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P403141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P403037

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P403038

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

Reference Method: SM 2120 B-2011

Batch ID: P403045

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P403123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P403125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P403344

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

Reference Method: SM 5310 B-2011

Batch ID: P403548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272141	Chloride	96.4		P	90 - 110
2272229	Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272141	Sulfate	96.7		P	90 - 110
2272229	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272078	Ammonia-N	97.0	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272182	Ammonia-N	96.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272147	Kjeldahl Nitrogen	105	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272892	Kjeldahl Nitrogen	96.7	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273162	Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272132	NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272132	Total-P	105	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272147	Total-P	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272098	O-Phosphate-P	97.5	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272191	O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P403125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272101	Fluoride	98.4	98.4	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272049	Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P403548

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272182	Organic Carbon	99.8	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272088	Turbidity	1.37	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272144	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272141	Chloride	0.610	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272141	Sulfate	1.14	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272078	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272182	Ammonia-N	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272147	Kjeldahl Nitrogen	5.73	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272892	Kjeldahl Nitrogen	2.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273162	Kjeldahl Nitrogen	1.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272132	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272132	Total-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272147	Total-P	1.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272098	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272191	O-Phosphate-P	1.20	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P403045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272181	Color (true)	1.10	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P403123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272101	Total Alkalinity	2.24	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P403401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272144	TDS	2.70	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P403125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272101	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272049	Organic Carbon	2.33	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P403548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272182	Organic Carbon	1.96	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107484

Included Lab Sample IDs: 2272151, 2272152, 2272153, 2272154, 2272155

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107487

Included Lab Sample IDs: 2272141, 2272142, 2272143, 2272144, 2272145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	99.0	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A107489

Included Lab Sample IDs: 2272141, 2272142, 2272143, 2272144, 2272145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115

Reference Method: SM 2320 B-2011

Run ID: A107535

Included Lab Sample IDs: 2272141, 2272142, 2272143, 2272144, 2272145

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

Reference Method: SM 4500 F-C-2011

Run ID: A107535

Included Lab Sample IDs: 2272141, 2272142, 2272143, 2272144, 2272145

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107555

Included Lab Sample IDs: 2272146, 2272147, 2272148, 2272149, 2272150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107562

Included Lab Sample IDs: 2272146, 2272147, 2272148, 2272149, 2272150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	98.4	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107569

Included Lab Sample IDs: 2272146, 2272147, 2272148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107618

Included Lab Sample IDs: 2272149, 2272150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107634

Included Lab Sample IDs: 2272141, 2272142, 2272143, 2272144, 2272145

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

Reference Method: SM 5310 B-2011

Run ID: A107635

Included Lab Sample IDs: 2272146, 2272148, 2272150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.7	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107640

Included Lab Sample IDs: 2272146, 2272147, 2272149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107674

Included Lab Sample IDs: 2272148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107697

Included Lab Sample IDs: 2272150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107704

Included Lab Sample IDs: 2272147, 2272149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.0	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A107704

Included Lab Sample IDs: 2272147, 2272149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	96.8	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				1.37	
	Turbidity				1.92	
EPA 300.0 Rev. 2.1	Chloride	100	96.4	97.9	0.610	
	Sulfate	99.9	96.7	100	1.14	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	97.0	98.4		1.26
	Ammonia-N	98.6	96.2	98.0		1.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	97.2		5.73
	Kjeldahl Nitrogen	107	96.7	99.4		2.12
	Kjeldahl Nitrogen	103	103	100		1.90
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	97.0	97.0		0.0
EPA 365.1 Rev. 2.0	Total-P	106	105	104		1.02
	Total-P	105	104	106		1.75
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	97.5	97.6		0.103
	O-Phosphate-P	101	99.7	101		1.20
SM 2120 B-2011	Color (true)	102			1.10	
SM 2320 B-2011	Total Alkalinity	103			2.24	
SM 2540 C-2011	TDS				2.70	
SM 4500 F-C-2011	Fluoride	99.8	98.4	98.4		0.0
SM 5310 B-2011	Organic Carbon	98.2	101			2.33
	Organic Carbon	94.4	99.8	97.5		1.96

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2272141, 2272142, 2272143, 2272144, 2272145
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2272141, 2272142, 2272143, 2272144, 2272145
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2272141, 2272142, 2272143, 2272144, 2272145
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2272146, 2272147, 2272148, 2272149, 2272150
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2272146, 2272147, 2272148, 2272149, 2272150
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2272146, 2272147, 2272148, 2272149, 2272150
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2272146, 2272147, 2272148, 2272149, 2272150
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2272151, 2272152, 2272153, 2272154, 2272155
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2272141, 2272142, 2272143, 2272144, 2272145
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2272141, 2272142, 2272143, 2272144, 2272145
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2272141, 2272142, 2272143, 2272144, 2272145
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2272141, 2272142, 2272143, 2272144, 2272145
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2272141, 2272142, 2272143, 2272144, 2272145
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2272146, 2272147, 2272148, 2272149, 2272150

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	08/26/2021			08/26/2021 15:25	Sarah A Nixon	2272141, 2272142, 2272143, 2272144, 2272145
EPA 300.0 Rev. 2.1	08/26/2021			09/02/2021 16:39	Roberta Tatti	2272141
	08/26/2021			09/02/2021 17:27	Roberta Tatti	2272142
	08/26/2021			09/02/2021 17:40	Roberta Tatti	2272143
	08/26/2021			09/02/2021 17:52	Roberta Tatti	2272144
	08/26/2021			09/02/2021 18:04	Roberta Tatti	2272145
EPA 350.1 Rev. 2.0	08/26/2021			08/31/2021 12:02	Ping Hua	2272146
	08/26/2021			08/31/2021 12:04	Ping Hua	2272147
	08/26/2021			08/31/2021 12:05	Ping Hua	2272148
	08/26/2021			09/02/2021 12:30	Ping Hua	2272149
	08/26/2021			09/02/2021 12:31	Ping Hua	2272150
EPA 351.2 Rev. 2.0	08/26/2021	09/02/2021 13:17	Benjamin T. Nordmann	09/03/2021 11:45	Alexandra J Mattheus	2272146
	08/26/2021	09/02/2021 13:17	Benjamin T. Nordmann	09/03/2021 11:47	Alexandra J Mattheus	2272147
	08/26/2021	09/02/2021 13:17	Benjamin T. Nordmann	09/03/2021 11:53	Alexandra J Mattheus	2272149
	08/26/2021	09/07/2021 12:14	Benjamin T. Nordmann	09/08/2021 09:33	Alexandra J Mattheus	2272148
	08/26/2021	09/08/2021 16:15	Benjamin T. Nordmann	09/09/2021 11:59	Alexandra J Mattheus	2272150
EPA 353.2 Rev. 2.0	08/26/2021			08/30/2021 11:57	Beverly Y. Sanders	2272146
	08/26/2021			08/30/2021 11:58	Beverly Y. Sanders	2272147
	08/26/2021			08/30/2021 11:59	Beverly Y. Sanders	2272148
	08/26/2021			08/30/2021 12:01	Beverly Y. Sanders	2272149
	08/26/2021			08/30/2021 12:02	Beverly Y. Sanders	2272150
EPA 365.1 Rev. 2.0	08/26/2021	08/30/2021 14:00	Simonne.V. Calhoun	08/31/2021 11:17	Shengyu Ding	2272146
	08/26/2021	08/30/2021 14:00	Simonne.V. Calhoun	08/31/2021 11:22	Shengyu Ding	2272147
	08/26/2021	08/30/2021 14:00	Simonne.V. Calhoun	08/31/2021 11:25	Shengyu Ding	2272148
	08/26/2021	08/30/2021 14:00	Simonne.V. Calhoun	08/31/2021 11:26	Shengyu Ding	2272149
	08/26/2021	08/30/2021 14:00	Simonne.V. Calhoun	08/31/2021 11:27	Shengyu Ding	2272150
EPA 365.1 Rev. 2.0 dissolved	08/26/2021			08/26/2021 14:42	James L Waggeberby	2272151
	08/26/2021			08/26/2021 14:43	James L Waggeberby	2272152
	08/26/2021			08/26/2021 14:44	James L Waggeberby	2272153
	08/26/2021			08/26/2021 14:45	James L Waggeberby	2272154
	08/26/2021			08/26/2021 14:55	James L Waggeberby	2272155
SM 2120 B-2011	08/26/2021			08/26/2021 16:46	Sarah A Nixon	2272141
	08/26/2021			08/26/2021 16:47	Sarah A Nixon	2272143
	08/26/2021			08/26/2021 16:48	Sarah A Nixon	2272142, 2272145
	08/26/2021			08/26/2021 16:51	Sarah A Nixon	2272144
SM 2320 B-2011	08/26/2021			08/27/2021 19:26	Dale L. Simmons	2272141
	08/26/2021			08/27/2021 19:41	Dale L. Simmons	2272142
	08/26/2021			08/27/2021 19:56	Dale L. Simmons	2272143
	08/26/2021			08/27/2021 20:11	Dale L. Simmons	2272144

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	08/26/2021			08/27/2021 20:24	Dale L. Simmons	2272145
SM 2540 C-2011	08/26/2021			08/30/2021 15:46	Yijie Li	2272141, 2272142, 2272143, 2272144, 2272145
SM 2540 D-2011	08/26/2021			08/30/2021 14:36	Yijie Li	2272141, 2272142, 2272143, 2272144, 2272145
SM 4500 F-C-2011	08/26/2021			08/27/2021 19:26	Dale L. Simmons	2272141
	08/26/2021			08/27/2021 19:41	Dale L. Simmons	2272142
	08/26/2021			08/27/2021 19:56	Dale L. Simmons	2272143
	08/26/2021			08/27/2021 20:11	Dale L. Simmons	2272144
	08/26/2021			08/27/2021 20:24	Dale L. Simmons	2272145
SM 5310 B-2011	08/26/2021			09/02/2021 00:22	Touraj Touran	2272146
	08/26/2021			09/02/2021 00:52	Touraj Touran	2272148
	08/26/2021			09/02/2021 01:26	Touraj Touran	2272150
	08/26/2021			09/08/2021 17:36	Madeline Gruver	2272147
	08/26/2021			09/08/2021 18:15	Madeline Gruver	2272149