

Chemical Analysis Report

SE-DIST-2022-03-09-01

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

Event Description: **Yeehaw Junction**
Request ID: **RQ-2022-03-07-30**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Fort Pierce, FL 34945
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 30-MAR-2022 10:25



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: Blue Cypress Creek

Collection Date/Time: 03/08/2022 09:30

Field ID: G3SE0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311306	DEP SOP: NU-094-1	Color (true)**	110		PCU	P410883	
	EPA 180.1 Rev. 2.0	Turbidity	0.90	I	NTU	P410886	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P411051	
		Sulfate	1.9		mg SO4/L	P411055	
	SM 2320 B-2011	Total Alkalinity	93		mg CaCO3/L	P411006	
	SM 2540 C-2011	TDS	151		mg/L	P411394	
	SM 2540 D-2011	TSS	2	I	mg/L	P411374	
	SM 4500 F-C-2011	Fluoride	0.099	I	mg F/L	P411009	
2311308	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P410949	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P411003	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P411158	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P411141	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P411101	
2311310	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P410880	

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: Padgett Branch @ 441

Collection Date/Time: 03/08/2022 10:20

Field ID: G3SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311307	DEP SOP: NU-094-1	Color (true)**	210		PCU	P410883	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P410886	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P411051	
		Sulfate	2.1		mg SO4/L	P411055	
	SM 2320 B-2011	Total Alkalinity	58		mg CaCO3/L	P411006	
	SM 2540 C-2011	TDS	164		mg/L	P411394	
	SM 2540 D-2011	TSS	5	I	mg/L	P411374	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P411009	
2311309	EPA 350.1 Rev. 2.0	Ammonia-N	0.57		mg N/L	P410947	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P411004	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.094		mg N/L	P411158	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P411141	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P411101	
2311311	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.29		mg P/L	P410880	

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: Fort Drum Marsh Conservation Area Northeast Entrance **Collection Date/Time: 03/08/2022 11:00**

Field ID: G3SE0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2311312	DEP SOP: NU-094-1	Color (true)**	180		PCU	P410883	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P410886	
	EPA 300.0 Rev. 2.1	Chloride	34	A	mg Cl/L	P411236	
		Sulfate	2.7	A	mg SO4/L	P411238	
	SM 2320 B-2011	Total Alkalinity	53		mg CaCO3/L	P411006	
	SM 2540 C-2011	TDS	154		mg/L	P411394	
	SM 2540 D-2011	TSS	4	I	mg/L	P411374	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P411009	
2311313	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P410947	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P411041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P411047	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P411141	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P411102	
2311314	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P410880	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: DEP SOP: NU-094-1
Batch ID: P410883

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410886

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411051

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411055

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411236

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411238

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410947

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410949

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411003

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411004

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411041

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411158

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410880

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

Reference Method: SM 2320 B-2011
Batch ID: P411006

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

Reference Method: SM 2540 C-2011
Batch ID: P411394

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411374

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P411009

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P411101

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

Reference Method: SM 5310 B-2011
Batch ID: P411102

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P410883

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411051

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411055

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411238

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410947

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410949

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411003

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411158

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411141

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: P410880

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

Reference Method: SM 2320 B-2011
Batch ID: P411006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P411009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P411101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	91.8		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P411102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311132	Chloride	101		P	90 - 110
2311307	Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311132	Sulfate	101		P	90 - 110
2311307	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311312	Chloride	98.0		P	90 - 110
2311447	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311312	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311313	Ammonia-N	96.6	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311142	Ammonia-N	98.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311097	Kjeldahl Nitrogen	97.6	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311098	Kjeldahl Nitrogen	106	113	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311082	Kjeldahl Nitrogen	96.6	96.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2310741	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311308	NO2NO3-N	96.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311338	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311147	O-Phosphate-P	97.4	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P411009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311136	Fluoride	98.1	98.7	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P411101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311473	Organic Carbon	99.6	98.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P411102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311474	Organic Carbon	97.5	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P410883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311297	Color (true)	1.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311471	Turbidity	10.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311132	Chloride	0.0612	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311132	Sulfate	0.0545	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311312	Chloride	0.270	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311312	Sulfate	0.574	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311313	Ammonia-N	1.94	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311142	Ammonia-N	2.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311097	Kjeldahl Nitrogen	1.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311098	Kjeldahl Nitrogen	5.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311082	Kjeldahl Nitrogen	0.471	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2310741	NO2NO3-N	0.277	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311308	NO2NO3-N	0.407	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311338	Total-P	1.26	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311147	O-Phosphate-P	1.82	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P411006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311136	Total Alkalinity	0.195	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P411394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311137	TDS	6.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P411009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311136	Fluoride	0.483	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P411101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311473	Organic Carbon	0.783	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P411102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311474	Organic Carbon	1.21	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110831

Included Lab Sample IDs: 2311306, 2311307

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110841

Included Lab Sample IDs: 2311310, 2311311, 2311314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	99.6	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A110842

Included Lab Sample IDs: 2311306, 2311307, 2311312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110843

Included Lab Sample IDs: 2311306, 2311307, 2311312

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110864

Included Lab Sample IDs: 2311309, 2311313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.7	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110865

Included Lab Sample IDs: 2311308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110885

Included Lab Sample IDs: 2311306, 2311307, 2311312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	95.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110885

Included Lab Sample IDs: 2311306, 2311307, 2311312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A110885

Included Lab Sample IDs: 2311306, 2311307, 2311312

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110916

Included Lab Sample IDs: 2311313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110934

Included Lab Sample IDs: 2311308, 2311309, 2311313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	96.2	P/P	90 - 110
Organic Carbon	95.0	95.7	P/P	90 - 110
Organic Carbon	95.8	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110959

Included Lab Sample IDs: 2311308, 2311309

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110994

Included Lab Sample IDs: 2311312

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.2	P/P	90 - 110
Sulfate	99.3	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110999

Included Lab Sample IDs: 2311308, 2311309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.9	P/P	90 - 110
Kjeldahl Nitrogen	108	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111027

Included Lab Sample IDs: 2311308, 2311309, 2311313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.1	103	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111064

Included Lab Sample IDs: 2311313

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.9	99.8	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
DEP SOP: NU-094-1	Color (true)	99.7			1.48	
EPA 180.1 Rev. 2.0	Turbidity	97.3			10.0	
EPA 300.0 Rev. 2.1	Chloride	101	101	99.9	0.0612	
	Chloride	98.7	98.0	100	0.270	
	Sulfate	101	101	102	0.0545	
	Sulfate	100	99.5		0.574	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	96.6	99.2		1.94
	Ammonia-N	97.8	98.0	100		2.22
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.6	99.6		1.70
	Kjeldahl Nitrogen	96.0	106	113		5.66
	Kjeldahl Nitrogen	93.0	96.6	96.1		0.471
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.5	98.0		0.277
	NO2NO3-N	98.5	96.4	96.9		0.407
EPA 365.1 Rev. 2.0	Total-P	101	104	103		1.26
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	97.4	99.6		1.82
SM 2320 B-2011	Total Alkalinity	98.3			0.195	
SM 2540 C-2011	TDS				6.45	
SM 4500 F-C-2011	Fluoride	99.0	98.1	98.7		0.483
SM 5310 B-2011	Organic Carbon	91.8	99.6	98.2		0.783
	Organic Carbon	95.6	97.5	99.4		1.21

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2311306, 2311307, 2311312
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2311306, 2311307, 2311312
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2311306, 2311307, 2311312
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2311306, 2311307, 2311312
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2311308, 2311309, 2311313
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2311308, 2311309, 2311313
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2311308, 2311309, 2311313
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2311308, 2311309, 2311313
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2311310, 2311311, 2311314
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2311306, 2311307, 2311312
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2311306, 2311307, 2311312
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2311306, 2311307, 2311312
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2311306, 2311307, 2311312
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2311308, 2311309, 2311313

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	03/09/2022			03/09/2022 15:50	Samantha L Bates	2311306
	03/09/2022			03/09/2022 16:13	Samantha L Bates	2311307
	03/09/2022			03/09/2022 16:14	Samantha L Bates	2311312
EPA 180.1 Rev. 2.0	03/09/2022			03/09/2022 13:46	Anna M. Plaviak	2311306
	03/09/2022			03/09/2022 14:07	Anna M. Plaviak	2311307
	03/09/2022			03/09/2022 14:09	Anna M. Plaviak	2311312
EPA 300.0 Rev. 2.1	03/09/2022			03/12/2022 04:14	Anna M. Plaviak	2311307
	03/09/2022			03/12/2022 06:02	Anna M. Plaviak	2311306
	03/09/2022			03/16/2022 18:03	Anna M. Plaviak	2311312
EPA 350.1 Rev. 2.0	03/09/2022			03/10/2022 11:14	Judith K. Clark	2311308
	03/09/2022			03/10/2022 13:33	Ping Hua	2311313
	03/09/2022			03/10/2022 13:37	Ping Hua	2311309
EPA 351.2 Rev. 2.0	03/09/2022	03/15/2022 17:10	Samantha L Bates	03/17/2022 13:33	Alexandra J Mattheus	2311309
	03/09/2022	03/15/2022 17:10	Samantha L Bates	03/17/2022 14:24	Alexandra J Mattheus	2311308
	03/09/2022	03/15/2022 17:10	Samantha L Bates	03/21/2022 12:23	Samantha L Bates	2311313
EPA 353.2 Rev. 2.0	03/09/2022			03/14/2022 11:50	Beverly Y. Sanders	2311313
	03/09/2022			03/16/2022 10:26	Beverly Y. Sanders	2311308
	03/09/2022			03/16/2022 10:27	Beverly Y. Sanders	2311309
EPA 365.1 Rev. 2.0	03/09/2022	03/17/2022 15:15	Simonne.V. Calhoun	03/18/2022 13:08	Sarah A Nixon	2311308
	03/09/2022	03/17/2022 15:15	Simonne.V. Calhoun	03/18/2022 13:09	Sarah A Nixon	2311309
	03/09/2022	03/17/2022 15:15	Simonne.V. Calhoun	03/18/2022 13:10	Sarah A Nixon	2311313
EPA 365.1 Rev. 2.0 dissolved	03/09/2022			03/09/2022 14:38	James L Waggeberby	2311310
	03/09/2022			03/09/2022 14:40	James L Waggeberby	2311311
	03/09/2022			03/09/2022 14:42	James L Waggeberby	2311314
SM 2320 B-2011	03/09/2022			03/11/2022 01:41	Dale L. Simmons	2311306
	03/09/2022			03/11/2022 01:55	Dale L. Simmons	2311307
	03/09/2022			03/11/2022 02:08	Dale L. Simmons	2311312
SM 2540 C-2011	03/09/2022			03/14/2022 14:02	Yijie Li	2311306, 2311307, 2311312
SM 2540 D-2011	03/09/2022			03/14/2022 15:03	Yijie Li	2311306, 2311307, 2311312
SM 4500 F-C-2011	03/09/2022			03/11/2022 01:41	Dale L. Simmons	2311306
	03/09/2022			03/11/2022 01:55	Dale L. Simmons	2311307
	03/09/2022			03/11/2022 02:08	Dale L. Simmons	2311312
SM 5310 B-2011	03/09/2022			03/14/2022 16:58	Khloe J Berg	2311308
	03/09/2022			03/14/2022 23:08	Khloe J Berg	2311309
	03/09/2022			03/15/2022 03:36	Khloe J Berg	2311313