

Chemical Analysis Report

SO-DIST-2022-06-10-02

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2022-06-06-17**
Customer: **SO-DIST**
Project ID: **BMAP**

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FLDEP South District Office
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Date Certified: 01-JUL-2022 10:31



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: Orange River @BoatRamp

Collection Date/Time: 06/09/2022 08:05

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333795	DEP SOP: NU-094-1	Color (true)**	53		PCU	P415061	
	SM 2320 B-2011	Total Alkalinity	161		mg CaCO3/L	P415748	
	SM 2540 D-2011	TSS	4	I	mg/L	P415432	
	SM 4500-F- C-2011	Fluoride	0.093	I	mg F/L	P415752	
2333799	SM 5310 B-2011 dissolved	Organic Carbon	8.4		mg C/L	P415362	
2333803	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P415639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P415162	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P415858	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P415186	
	SM 5310 B-2011	Organic Carbon	8.3		mg C/L	P415362	
2333807	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P415057	

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: Roberts Canal @ SR 80

Collection Date/Time: 06/09/2022 08:50

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333796	DEP SOP: NU-094-1	Color (true)**	80	A	PCU	P415061	
	SM 2320 B-2011	Total Alkalinity	193		mg CaCO3/L	P415748	
	SM 2540 D-2011	TSS	9	I	mg/L	P415432	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P415752	
2333800	SM 5310 B-2011 dissolved	Organic Carbon	15		mg C/L	P415362	
2333804	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P415824	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P415163	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P415858	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P415186	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P415362	
2333808	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P415057	

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: Nine Mile Canal @ SR 80

Collection Date/Time: 06/09/2022 09:35

Field ID: G3SD0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333797	DEP SOP: NU-094-1	Color (true)**	70		PCU	P415061	
	SM 2320 B-2011	Total Alkalinity	174		mg CaCO3/L	P415748	
	SM 2540 D-2011	TSS	19		mg/L	P415432	
	SM 4500-F- C-2011	Fluoride	0.36		mg F/L	P415752	
2333801	SM 5310 B-2011 dissolved	Organic Carbon	14		mg C/L	P415362	
2333805	EPA 350.1 Rev. 2.0	Ammonia-N	0.29		mg N/L	P415639	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P415163	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P415858	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P415186	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P415362	
2333809	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P415057	

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: Telegraph Creek @ USGS

Collection Date/Time: 06/09/2022 11:20

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2333798	DEP SOP: NU-094-1	Color (true)**	44		PCU	P415061	
	SM 2320 B-2011	Total Alkalinity	225		mg CaCO3/L	P415748	
	SM 2540 D-2011	TSS	2	I	mg/L	P415432	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P415752	
2333802	SM 5310 B-2011 dissolved	Organic Carbon	12		mg C/L	P415362	
2333806	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P415824	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P415536	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P415858	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P415465	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P415362	
2333810	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P415057	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P415061

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415824

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415163

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415536

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415858

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415186

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415465

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P415057

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

Reference Method: SM 2320 B-2011
Batch ID: P415748

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P415432

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415752

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415362

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P415362

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: P415061

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415639

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415824

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415163

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415536

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: P415858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415186

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415465

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P415057

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

Reference Method: SM 2320 B-2011
Batch ID: P415748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P415752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.7		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P415362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333803	Ammonia-N	95.6	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334324	Ammonia-N	98.6	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333334	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333643	Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333805	NO2NO3-N	92.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333803	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333840	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P415057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333675	O-Phosphate-P	95.3	97.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P415752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334354	Fluoride	98.1	98.1	P/P	94 - 104

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P415362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333840	Organic Carbon	94.1	94.8	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P415362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333840	Organic Carbon	94.1	94.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333796	Color (true)	0.893	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333803	Ammonia-N	0.652	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334324	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333334	Kjeldahl Nitrogen	1.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333643	Kjeldahl Nitrogen	0.189	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333672	Kjeldahl Nitrogen	5.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333805	NO2NO3-N	0.220	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333803	Total-P	0.858	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P415465

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333840	Total-P	1.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P415057

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333675	O-Phosphate-P	1.97	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P415748

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334354	Total Alkalinity	1.22	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011

Batch ID: P415752

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334354	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P415362

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333840	Organic Carbon	0.604	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved

Batch ID: P415362

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333840	Organic Carbon	0.604	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: A112747

Included Lab Sample IDs: 2333807, 2333808, 2333809, 2333810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.3	P/P	90 - 110
O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A112750

Included Lab Sample IDs: 2333795, 2333796, 2333797, 2333798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	101	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112889

Included Lab Sample IDs: 2333803, 2333804, 2333805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.1	94.8	P/P	90 - 110
Kjeldahl Nitrogen	99.3	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A112896

Included Lab Sample IDs: 2333803, 2333804, 2333805, 2333806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	96.4	P/P	90 - 110
Organic Carbon	97.4	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A112896

Included Lab Sample IDs: 2333799, 2333800, 2333801, 2333802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	97.4	P/P	90 - 110
Organic Carbon	97.4	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112934

Included Lab Sample IDs: 2333804, 2333805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112938

Included Lab Sample IDs: 2333803

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113007

Included Lab Sample IDs: 2333803, 2333805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113008

Included Lab Sample IDs: 2333806

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

Reference Method: SM 2320 B-2011

Run ID: A113064

Included Lab Sample IDs: 2333795, 2333796, 2333797, 2333798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	97.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113064

Included Lab Sample IDs: 2333795, 2333796, 2333797, 2333798

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113073

Included Lab Sample IDs: 2333806

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113107

Included Lab Sample IDs: 2333804, 2333806

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113128

Included Lab Sample IDs: 2333803, 2333804, 2333805, 2333806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	96.5	94.5	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 SMP	MS
					LCS	
DEP SOP: NU-094-1	Color (true)	104			0.893	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	95.6	96.6		0.652
	Ammonia-N	97.4	98.6	97.4		1.13
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.9	102	105		1.79
	Kjeldahl Nitrogen	93.0	104	105		0.189
	Kjeldahl Nitrogen	103				5.12
EPA 353.2 Rev. 2.0	NO2NO3-N	95.0	92.0			0.220
EPA 365.1 Rev. 2.0	Total-P	103	104	103		0.858
	Total-P	107	107	105		1.98
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	95.3	97.2		1.97
SM 2320 B-2011	Total Alkalinity	99.6			1.22	
SM 4500-F- C-2011	Fluoride	96.9	98.1	98.1		0.0
SM 5310 B-2011	Organic Carbon	93.7	94.1	94.8		0.604
SM 5310 B-2011 dissolved	Organic Carbon	93.7	94.1	94.8		0.604

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2333795, 2333796, 2333797, 2333798
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2333803, 2333804, 2333805, 2333806
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2333803, 2333804, 2333805, 2333806
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2333803, 2333804, 2333805, 2333806
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2333803, 2333804, 2333805, 2333806
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2333807, 2333808, 2333809, 2333810
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2333795, 2333796, 2333797, 2333798
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2333795, 2333796, 2333797, 2333798
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2333795, 2333796, 2333797, 2333798
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2333803, 2333804, 2333805, 2333806
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2333799, 2333800, 2333801, 2333802

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	06/10/2022			06/10/2022 14:28	Blanca Fach	2333796
	06/10/2022			06/10/2022 14:30	Blanca Fach	2333795
	06/10/2022			06/10/2022 14:31	Blanca Fach	2333797, 2333798
EPA 350.1 Rev. 2.0	06/10/2022			06/23/2022 12:11	Ping Hua	2333803
	06/10/2022			06/23/2022 12:17	Ping Hua	2333805
	06/10/2022			06/27/2022 12:47	Ping Hua	2333804
	06/10/2022			06/27/2022 12:48	Ping Hua	2333806
EPA 351.2 Rev. 2.0	06/10/2022	06/16/2022 09:51	Samantha L Bates	06/16/2022 16:05	Alexandra J Mattheus	2333803
	06/10/2022	06/16/2022 09:51	Samantha L Bates	06/16/2022 17:35	Alexandra J Mattheus	2333804
	06/10/2022	06/16/2022 09:51	Samantha L Bates	06/16/2022 17:37	Alexandra J Mattheus	2333805
	06/10/2022	06/23/2022 16:39	Samantha L Bates	06/24/2022 15:55	Alexandra J Mattheus	2333806
EPA 353.2 Rev. 2.0	06/10/2022			06/28/2022 09:10	Beverly Y. Sanders	2333805
	06/10/2022			06/28/2022 09:16	Beverly Y. Sanders	2333803
	06/10/2022			06/28/2022 09:18	Beverly Y. Sanders	2333804
	06/10/2022			06/28/2022 09:19	Beverly Y. Sanders	2333806
EPA 365.1 Rev. 2.0	06/10/2022	06/15/2022 11:23	Simonne.V. Calhoun	06/20/2022 11:56	James L Waggeberby	2333804
	06/10/2022	06/15/2022 11:23	Simonne.V. Calhoun	06/20/2022 11:57	James L Waggeberby	2333805
	06/10/2022	06/15/2022 11:23	Simonne.V. Calhoun	06/20/2022 16:50	James L Waggeberby	2333803
	06/10/2022	06/22/2022 17:36	Adam P Silver	06/23/2022 11:10	James L Waggeberby	2333806
EPA 365.1 Rev. 2.0 dissolved	06/10/2022			06/10/2022 14:22	James L Waggeberby	2333807
	06/10/2022			06/10/2022 14:23	James L Waggeberby	2333808
	06/10/2022			06/10/2022 14:28	James L Waggeberby	2333809
	06/10/2022			06/10/2022 14:30	James L Waggeberby	2333810
SM 2320 B-2011	06/10/2022			06/23/2022 02:04	Dale L. Simmons	2333795
	06/10/2022			06/23/2022 02:18	Dale L. Simmons	2333796
	06/10/2022			06/23/2022 02:32	Dale L. Simmons	2333797
	06/10/2022			06/23/2022 02:47	Dale L. Simmons	2333798
SM 2540 D-2011	06/10/2022			06/14/2022 14:14	Yijie Li	2333795, 2333796, 2333797, 2333798
SM 4500-F- C-2011	06/10/2022			06/23/2022 02:04	Dale L. Simmons	2333795
	06/10/2022			06/23/2022 02:18	Dale L. Simmons	2333796
	06/10/2022			06/23/2022 02:32	Dale L. Simmons	2333797
	06/10/2022			06/23/2022 02:47	Dale L. Simmons	2333798
SM 5310 B-2011	06/10/2022			06/16/2022 19:29	Khloe J Berg	2333806
	06/10/2022			06/17/2022 00:23	Khloe J Berg	2333803
	06/10/2022			06/17/2022 00:44	Khloe J Berg	2333804
	06/10/2022			06/17/2022 00:59	Khloe J Berg	2333805
SM 5310 B-2011 dissolved	06/10/2022			06/16/2022 22:51	Khloe J Berg	2333799
	06/10/2022			06/16/2022 23:06	Khloe J Berg	2333800
	06/10/2022			06/16/2022 23:21	Khloe J Berg	2333801
	06/10/2022			06/17/2022 00:08	Khloe J Berg	2333802