

Chemical Analysis Report

SE-DIST-2022-11-09-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Dry Site Run and Blank**
Request ID: **RQ-2022-10-17-56**
Customer: **SE-DIST**
Project ID: **SMP**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-DEC-2022 17:20

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Starvation Slough @ Public Use Trail

Collection Date/Time: 11/08/2022 09:30

Field ID: G4SE0144

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2368623	DEP SOP: NU-094-1	Color (true)	460		PCU	P422180	
	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P422177	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P422650	
		Sulfate	0.94		mg SO4/L	P422653	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P422794	
	SM 2540 C-2015	TDS	125		mg/L	P422674	
	SM 2540 D-2015	TSS	8	I	mg/L	P422562	RPD
	SM 4500-F- C-2011	Fluoride	0.035	I	mg F/L	P422643	
2368624	EPA 350.1 Rev. 2.0	Ammonia-N	0.46		mg N/L	P422661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P422371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P422221	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P422310	
	SM 5310 B-2011	Organic Carbon	37		mg C/L	P422754	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 11/08/2022 09:45

Field ID: FB_11082022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2368625	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P422180	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P422177	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P422650	
		Sulfate	0.20	U	mg SO4/L	P422653	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P422794	
	SM 2540 C-2015	TDS	15	U	mg/L	P422674	
	SM 2540 D-2015	TSS	2	U	mg/L	P422562	RPD
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P422643	
2368626	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P422661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P422371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422221	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P422850	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P422754	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500-F- C-2011: The result was confirmed on 11/30/2022.

Sample Location: Gomez Creek North @ 441

Collection Date/Time: 11/08/2022 10:30

Field ID: G3SE0046

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2368619	DEP SOP: NU-094-1	Color (true)	420		PCU	P422180	
	EPA 180.1 Rev. 2.0	Turbidity	7.5		NTU	P422177	
	EPA 300.0 Rev. 2.1	Chloride	86		mg Cl/L	P422650	
		Sulfate	6.0		mg SO4/L	P422653	
	SM 2320 B-2011	Total Alkalinity	95		mg CaCO3/L	P422638	
	SM 2540 C-2015	TDS	356	A	mg/L	P422674	
	SM 2540 D-2015	TSS	11	AJ	mg/L	P422562	RPD
	SM 4500-F- C-2011	Fluoride	0.091	I	mg F/L	P422642	
2368621	EPA 350.1 Rev. 2.0	Ammonia-N	0.27		mg N/L	P422661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.2		mg N/L	P422371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P422220	
	EPA 365.1 Rev. 2.0	Total-P	2.2		mg P/L	P422310	
	SM 5310 B-2011	Organic Carbon	43		mg C/L	P422754	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2540 D-2015: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Padgett Branch @ 441

Collection Date/Time: 11/08/2022 11:00

Field ID: G3SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2368620	DEP SOP: NU-094-1	Color (true)	570		PCU	P422180	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P422177	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P422650	
		Sulfate	1.9		mg SO4/L	P422653	
	SM 2320 B-2011	Total Alkalinity	7.3		mg CaCO3/L	P422794	
	SM 2540 C-2015	TDS	148		mg/L	P422674	
	SM 2540 D-2015	TSS	2	I	mg/L	P422562	RPD
	SM 4500-F- C-2011	Fluoride	0.037	I	mg F/L	P422643	
2368622	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P422661	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P422855	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422220	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P422310	
	SM 5310 B-2011	Organic Carbon	42		mg C/L	P422754	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: 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: P422180

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422177

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422650

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422653

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422661

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422371

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422855

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422220

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422221

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422310

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

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

Reference Method: SM 2320 B-2011
Batch ID: P422638

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

Reference Method: SM 2320 B-2011
Batch ID: P422794

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

Reference Method: SM 2540 C-2015
Batch ID: P422674

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422562

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422642

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422643

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P422754

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: P422180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.2		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422650

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422653

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422661

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422855

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422310

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

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

Reference Method: SM 2320 B-2011
Batch ID: P422638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.7		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P422794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.5		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P422674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.7		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P422562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P422643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422754

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: P422650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368515	Chloride	99.2		P	90 - 110
2368724	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368515	Sulfate	99.9		P	90 - 110
2368724	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368639	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368825	Kjeldahl Nitrogen	92.9	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368827	Kjeldahl Nitrogen	90.2	90.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368517	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368639	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368641	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370877	Total-P	104	103	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P422642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368982	Fluoride	101	102	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P422643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368966	Fluoride	102	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2368640	Organic Carbon	97.6	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P422180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368638	Color (true)	0.958	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368515	Chloride	0.591	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P422653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368515	Sulfate	0.588	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P422661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368639	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368825	Kjeldahl Nitrogen	5.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368827	Kjeldahl Nitrogen	0.528	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368517	NO2NO3-N	0.251	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368639	NO2NO3-N	0.462	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368641	Total-P	0.470	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370877	Total-P	1.04	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P422638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368982	Total Alkalinity	0.397	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P422794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368966	Total Alkalinity	0.733	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P422674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368619	TDS	5.91	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P422562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368619	TSS	10.9	Sample	F	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P422642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368982	Fluoride	0.934	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P422643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368966	Fluoride	0.972	Spike	P	0 - 1.6

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P422754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2368640	Organic Carbon	1.25	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115843

Included Lab Sample IDs: 2368619, 2368620, 2368623, 2368625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A115844

Included Lab Sample IDs: 2368619, 2368620, 2368623, 2368625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	99.3	P/P	90 - 110
Color (true)	99.7	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115863

Included Lab Sample IDs: 2368621, 2368622, 2368624, 2368626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	106	P/P	90 - 110
NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A115939

Included Lab Sample IDs: 2368619, 2368620, 2368623, 2368625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	99.3	P/P	90 - 110
Chloride	98.4	103	P/P	90 - 110
Sulfate	105	100	P/P	90 - 110
Sulfate	99.4	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115962

Included Lab Sample IDs: 2368622, 2368624

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115997

Included Lab Sample IDs: 2368621

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	95.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116057

Included Lab Sample IDs: 2368619

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	95.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A116057

Included Lab Sample IDs: 2368619, 2368620, 2368623, 2368625

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116064

Included Lab Sample IDs: 2368621, 2368622, 2368624, 2368626

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116075

Included Lab Sample IDs: 2368621, 2368624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	93.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116085

Included Lab Sample IDs: 2368626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	93.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116128

Included Lab Sample IDs: 2368621, 2368622, 2368624, 2368626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116145

Included Lab Sample IDs: 2368620, 2368623, 2368625

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116192

Included Lab Sample IDs: 2368626

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116194

Included Lab Sample IDs: 2368622

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	98.5	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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)	97.2			0.958	
EPA 180.1 Rev. 2.0	Turbidity	99.3				
EPA 300.0 Rev. 2.1	Chloride	101	99.2	102	0.591	
	Sulfate	101	99.9	103	0.588	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	102	102		0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5	92.9	98.8		5.78
	Kjeldahl Nitrogen	100	90.2	90.7		0.528
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106	106		0.251
	NO2NO3-N	106	108	108		0.462
EPA 365.1 Rev. 2.0	Total-P	106	109	108		0.470
	Total-P	102	104	103		1.04
SM 2320 B-2011	Total Alkalinity	94.7			0.397	
	Total Alkalinity	95.5			0.733	
SM 2540 C-2015	TDS	97.7			5.91	
SM 2540 D-2015	TSS	93.1			10.9	
SM 4500-F- C-2011	Fluoride	99.4	101	102		0.934
	Fluoride	99.9	102	100		0.972
SM 5310 B-2011	Organic Carbon	95.6	97.6	95.9		1.25

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2368619, 2368620, 2368623, 2368625
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2368619, 2368620, 2368623, 2368625
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2368619, 2368620, 2368623, 2368625
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2368619, 2368620, 2368623, 2368625
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2368621, 2368622, 2368624, 2368626
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2368621, 2368622, 2368624, 2368626
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2368621, 2368622, 2368624, 2368626
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2368621, 2368622, 2368624, 2368626
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2368619, 2368620, 2368623, 2368625
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2368619, 2368620, 2368623, 2368625
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2368619, 2368620, 2368623, 2368625
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2368619, 2368620, 2368623, 2368625
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2368621, 2368622, 2368624, 2368626

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	11/09/2022			11/09/2022 16:20	Samantha L Bates	2368625
	11/09/2022			11/09/2022 16:36	Samantha L Bates	2368619, 2368620
	11/09/2022			11/09/2022 16:37	Samantha L Bates	2368623
EPA 180.1 Rev. 2.0	11/09/2022			11/09/2022 13:18	Chandler E Cox	2368619
	11/09/2022			11/09/2022 13:19	Chandler E Cox	2368620
	11/09/2022			11/09/2022 13:20	Chandler E Cox	2368623
EPA 300.0 Rev. 2.1	11/09/2022			11/09/2022 13:22	Chandler E Cox	2368625
	11/09/2022			11/19/2022 08:12	Anna M. Plaviak	2368619
	11/09/2022			11/19/2022 08:28	Anna M. Plaviak	2368620
EPA 350.1 Rev. 2.0	11/09/2022			11/19/2022 08:43	Anna M. Plaviak	2368623
	11/09/2022			11/19/2022 09:28	Anna M. Plaviak	2368625
	11/09/2022			11/21/2022 12:26	Ping Hua	2368621
EPA 351.2 Rev. 2.0	11/09/2022			11/21/2022 12:27	Ping Hua	2368622
	11/09/2022			11/21/2022 12:29	Ping Hua	2368624
	11/09/2022			11/21/2022 12:30	Ping Hua	2368626
EPA 353.2 Rev. 2.0	11/09/2022	11/16/2022 13:10	Alexandra J Mattheus	11/21/2022 14:24	Judith K. Clark	2368621
	11/09/2022	11/16/2022 13:10	Alexandra J Mattheus	11/21/2022 14:26	Judith K. Clark	2368624
	11/09/2022	11/16/2022 13:10	Alexandra J Mattheus	11/21/2022 18:33	Judith K. Clark	2368626
EPA 365.1 Rev. 2.0	11/09/2022	11/29/2022 13:30	Simonne.V. Calhoun	11/30/2022 11:30	Judith K. Clark	2368622
	11/09/2022			11/10/2022 11:37	Beverly Y. Sanders	2368621
	11/09/2022			11/10/2022 11:38	Beverly Y. Sanders	2368622
SM 2320 B-2011	11/09/2022			11/10/2022 11:51	Beverly Y. Sanders	2368624
	11/09/2022			11/10/2022 11:52	Beverly Y. Sanders	2368626
	11/09/2022			11/16/2022 14:03	James L Waggeberby	2368622, 2368624
SM 2540 C-2015	11/09/2022	11/15/2022 10:56	Simonne.V. Calhoun	11/17/2022 13:32	James L Waggeberby	2368621
	11/09/2022	11/15/2022 10:56	Simonne.V. Calhoun	11/30/2022 11:43	James L Waggeberby	2368626
	11/09/2022	11/29/2022 14:43	Adam P Silver	11/19/2022 09:08	Dale L. Simmons	2368619
SM 2540 D-2015	11/09/2022			11/21/2022 20:18	Dale L. Simmons	2368620
	11/09/2022			11/21/2022 20:28	Dale L. Simmons	2368623
	11/09/2022			11/21/2022 20:35	Dale L. Simmons	2368625
SM 4500-F- C-2011	11/09/2022			11/14/2022 15:59	Yijie Li	2368619, 2368620, 2368623, 2368625
	11/09/2022			11/14/2022 15:59	Yijie Li	2368619, 2368620, 2368623, 2368625
	11/09/2022			11/19/2022 09:08	Dale L. Simmons	2368619
SM 5310 B-2011	11/09/2022			11/19/2022 10:49	Dale L. Simmons	2368620
	11/09/2022			11/19/2022 11:01	Dale L. Simmons	2368623
	11/09/2022			11/19/2022 11:11	Dale L. Simmons	2368625
	11/09/2022			11/21/2022 20:28	Khloe J Berg	2368621
	11/09/2022			11/21/2022 20:43	Khloe J Berg	2368622
	11/09/2022			11/21/2022 20:57	Khloe J Berg	2368624
	11/09/2022			11/21/2022 21:11	Khloe J Berg	2368626