

Chemical Analysis Report

SO-DIST-2023-10-19-01

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

Event Description: **2023 SMP : P Riv**
Request ID: **RQ-2023-09-18-47**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 314
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 07-NOV-2023 13:28

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: PEACE RIVER ABOVE HORSE CREEK 2

Collection Date/Time: 10/18/2023 10:00

Field ID: G3SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446031	DEP SOP: NU-094-1	Color (true)	240		PCU	P436769	
	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P436773	
	EPA 300.0 Rev. 2.1	Chloride	23	A	mg Cl/L	P437373	
		Sulfate	36	A	mg SO4/L	P437377	
	SM 2320 B-2011	Total Alkalinity	56		mg CaCO3/L	P436862	
	SM 2540 C-2015	TDS	181		mg/L	P437261	
	SM 2540 D-2015	TSS	5	I	mg/L	P437212	
	SM 4500-F- C-2011	Fluoride	0.48		mg F/L	P436864	
2446032	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P436874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P436781	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P437166	
	EPA 365.1 Rev. 2.0	Total-P	0.69		mg P/L	P436838	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P436903	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 10/18/2023 10:45

Field ID: FB_10182023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446033	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P436769	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P436773	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P437373	
		Sulfate	0.20	U	mg SO4/L	P437377	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P436862	
	SM 2540 C-2015	TDS	15	U	mg/L	P437261	
	SM 2540 D-2015	TSS	2	U	mg/L	P437212	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P436864	
2446034	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P436874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P436781	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P436937	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P436839	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P437014	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: PEACE RIVER ESTUARY AT HARBOUR HEIGHTS

Collection Date/Time: 10/18/2023 08:55

Field ID: G3SD0148

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2446029	DEP SOP: NU-094-1	Color (true)	250		PCU	P436769	
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P436773	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P437373	
		Sulfate	47		mg SO4/L	P437377	
	SM 2320 B-2011	Total Alkalinity	53		mg CaCO3/L	P436862	
	SM 2540 C-2015	TDS	380	A	mg/L	P437261	
	SM 2540 D-2015	TSS	4	IA	mg/L	P437212	
	SM 4500-F- C-2011	Fluoride	0.42		mg F/L	P436864	
2446030	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P436874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P436781	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P437072	
	EPA 365.1 Rev. 2.0	Total-P	0.65		mg P/L	P436838	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P436903	

Ref. Method and Comment:

SM 2540 D-2015: 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: P436769

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436773

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437373

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437377

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436874

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436781

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436937

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437072

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437166

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: P436838

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436839

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

Reference Method: SM 2320 B-2011
Batch ID: P436862

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

Reference Method: SM 2540 C-2015
Batch ID: P437261

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437212

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436864

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P436903

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

Reference Method: SM 5310 B-2011
Batch ID: P437014

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: P436769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436773

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437373

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437377

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436874

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	93.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437072

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: P437166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436838

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436839

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

Reference Method: SM 2320 B-2011
Batch ID: P436862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.1		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P437261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	107		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437212

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.0		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P436864

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

Reference Method: SM 5310 B-2011
Batch ID: P436903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446031	Chloride	105		P	90 - 110
2446235	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446031	Sulfate	105		P	90 - 110
2446235	Sulfate	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446002	Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436781

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446021	Kjeldahl Nitrogen	103	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445929	NO2NO3-N	93.0	91.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446237	NO2NO3-N	96.4	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445384	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445983	Total-P	101	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446089	Total-P	105	103	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P436864

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445705	Fluoride	100	99.8	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2445610	Organic Carbon	97.2	99.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2446089	Organic Carbon	96.5	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P436769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446042	Color (true)	5.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445948	Turbidity	11.4	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446031	Chloride	0.646	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446031	Sulfate	1.02	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446002	Ammonia-N	0.651	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446021	Kjeldahl Nitrogen	4.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445929	NO2NO3-N	2.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446237	NO2NO3-N	0.449	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445384	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445983	Total-P	1.60	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446089	Total-P	1.46	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P436862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445705	Total Alkalinity	1.99	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P437261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446029	TDS	7.64	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P436864

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445705	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P436903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2445610	Organic Carbon	1.74	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P437014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2446089	Organic Carbon	1.81	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122250

Included Lab Sample IDs: 2446029, 2446031, 2446033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.8	P/P	90 - 110
Color (true)	99.9	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122251

Included Lab Sample IDs: 2446029, 2446031, 2446033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A122285

Included Lab Sample IDs: 2446029, 2446031, 2446033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122285

Included Lab Sample IDs: 2446029, 2446031, 2446033

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122292

Included Lab Sample IDs: 2446030, 2446032, 2446034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122308

Included Lab Sample IDs: 2446030, 2446032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122310

Included Lab Sample IDs: 2446030, 2446032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122313

Included Lab Sample IDs: 2446034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	94.0	92.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122322

Included Lab Sample IDs: 2446030, 2446032, 2446034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122353

Included Lab Sample IDs: 2446034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	108	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122369

Included Lab Sample IDs: 2446034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122402

Included Lab Sample IDs: 2446030

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122446

Included Lab Sample IDs: 2446032

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122479

Included Lab Sample IDs: 2446029, 2446031, 2446033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	101	100	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)	99.5			5.28	
EPA 180.1 Rev. 2.0	Turbidity	104			11.4	
EPA 300.0 Rev. 2.1	Chloride	105	105	107	0.646	
	Sulfate	106	105	106	1.02	
EPA 350.1 Rev. 2.0	Ammonia-N	100	99.4	100		0.651
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.8	103	110		4.29
EPA 353.2 Rev. 2.0	NO2NO3-N	93.5	93.0	91.0		2.17
	NO2NO3-N	98.5	96.4	95.8		0.449
	NO2NO3-N	99.0	100	100		0.0
EPA 365.1 Rev. 2.0	Total-P	104	101	99.6		1.60
	Total-P	104	105	103		1.46
SM 2320 B-2011	Total Alkalinity	97.1			1.99	
SM 2540 C-2015	TDS	107			7.64	
SM 2540 D-2015	TSS	92.0				
SM 4500-F- C-2011	Fluoride	99.6	100	99.8		0.480
SM 5310 B-2011	Organic Carbon	95.3	97.2	99.6		1.74
	Organic Carbon	96.4	96.5	98.8		1.81

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2446029, 2446031, 2446033
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2446029, 2446031, 2446033
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2446029, 2446031, 2446033
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2446029, 2446031, 2446033
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2446030, 2446032, 2446034
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2446030, 2446032, 2446034
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2446030, 2446032, 2446034
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2446030, 2446032, 2446034
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2446029, 2446031, 2446033
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2446029, 2446031, 2446033
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2446029, 2446031, 2446033
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2446029, 2446031, 2446033
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2446030, 2446032, 2446034

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	10/19/2023			10/19/2023 14:42	Anna M. Plaviak	2446033
	10/19/2023			10/19/2023 14:59	Anna M. Plaviak	2446029
	10/19/2023			10/19/2023 15:00	Anna M. Plaviak	2446031
EPA 180.1 Rev. 2.0	10/19/2023			10/19/2023 13:50	Samantha L Bates	2446029
	10/19/2023			10/19/2023 13:52	Samantha L Bates	2446031
	10/19/2023			10/19/2023 13:53	Samantha L Bates	2446033
EPA 300.0 Rev. 2.1	10/19/2023			11/02/2023 07:02	James L Waggeberby	2446031
	10/19/2023			11/02/2023 08:32	James L Waggeberby	2446029
	10/19/2023			11/02/2023 08:47	James L Waggeberby	2446033
EPA 350.1 Rev. 2.0	10/19/2023			10/23/2023 13:26	Ping Hua	2446030
	10/19/2023			10/23/2023 13:27	Ping Hua	2446032
	10/19/2023			10/23/2023 13:28	Ping Hua	2446034
EPA 351.2 Rev. 2.0	10/19/2023	10/20/2023 11:17	Simonne.V. Calhoun	10/24/2023 15:53	Samantha L Bates	2446030
	10/19/2023	10/20/2023 11:17	Simonne.V. Calhoun	10/24/2023 15:55	Samantha L Bates	2446032
	10/19/2023	10/20/2023 11:17	Simonne.V. Calhoun	10/24/2023 15:57	Samantha L Bates	2446034
EPA 353.2 Rev. 2.0	10/19/2023			10/23/2023 16:11	Fadila Guebre	2446034
	10/19/2023			10/26/2023 14:22	Fadila Guebre	2446030
	10/19/2023			10/30/2023 14:03	Anna M. Plaviak	2446032
EPA 365.1 Rev. 2.0	10/19/2023	10/23/2023 13:55	Simonne.V. Calhoun	10/24/2023 12:10	Simonne.V. Calhoun	2446030
	10/19/2023	10/23/2023 13:55	Simonne.V. Calhoun	10/24/2023 12:11	Simonne.V. Calhoun	2446032
	10/19/2023	10/23/2023 13:55	Simonne.V. Calhoun	10/25/2023 15:16	Simonne.V. Calhoun	2446034
SM 2320 B-2011	10/19/2023			10/21/2023 00:20	Chandler E Cox	2446029
	10/19/2023			10/21/2023 00:32	Chandler E Cox	2446031
	10/19/2023			10/21/2023 00:41	Chandler E Cox	2446033
SM 2540 C-2015	10/19/2023			10/24/2023 15:22	Yijie Li	2446029, 2446031, 2446033
SM 2540 D-2015	10/19/2023			10/24/2023 15:22	Yijie Li	2446029, 2446031, 2446033
SM 4500-F- C-2011	10/19/2023			10/21/2023 00:20	Chandler E Cox	2446029
	10/19/2023			10/21/2023 00:32	Chandler E Cox	2446031
	10/19/2023			10/21/2023 00:41	Chandler E Cox	2446033
SM 5310 B-2011	10/19/2023			10/24/2023 00:21	Elise M. Gillis	2446030
	10/19/2023			10/24/2023 00:35	Elise M. Gillis	2446032
	10/19/2023			10/25/2023 17:45	Elise M. Gillis	2446034