

Chemical Analysis Report

NW-DIST-2023-09-20-02

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

Event Description: **Highway 20 Run**
Request ID: **RQ-2023-09-18-24**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 10-OCT-2023 10:46



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: BOGGY BAYOU MOUTH

Collection Date/Time: 09/19/2023 10:25

Field ID: G3NW0186

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2438468	DEP SOP: NU-094-1	Color (true)	3.2	I	PCU	P435259	
	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P435279	
	EPA 300.0 Rev. 2.1	Chloride	1.2E+04		mg Cl/L	P435623	
		Sulfate	1.7E+03		mg SO4/L	P435626	
	SM 2320 B-2011	Total Alkalinity	79		mg CaCO3/L	P435587	
	SM 2540 C-2015	TDS	1.98E+04		mg/L	P435728	
	SM 2540 D-2015	TSS	3	UA	mg/L	P435686	
	SM 4500-F- C-2011	Fluoride	0.73		mg F/L	P435590	
2438469	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P435671	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P435715	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P435819	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P435540	
	SM 5310 B-2011	Organic Carbon	3.2	I	mg C/L	P435499	

Ref. Method and Comment:

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

EPA 353.2 Rev. 2.0: Batch matrix spike recoveries and relative percent difference are unavailable because of analytical difficulties.

Sample Location: BASIN BAYOU NORTH END

Collection Date/Time: 09/19/2023 11:40

Field ID: G3NW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2438466	DEP SOP: NU-094-1	Color (true)	46	A	PCU	P435259	
	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P435279	
	EPA 300.0 Rev. 2.1	Chloride	1.1E+03		mg Cl/L	P435623	
		Sulfate	160		mg SO4/L	P435626	
	SM 2320 B-2011	Total Alkalinity	7.6		mg CaCO3/L	P435583	
	SM 2540 C-2015	TDS	1.99E+03		mg/L	P435728	
	SM 2540 D-2015	TSS	2	I	mg/L	P435684	
	SM 4500-F- C-2011	Fluoride	0.078	I	mg F/L	P435586	
2438467	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P435466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P435899	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P436071	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P435537	MS
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P435667	

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: P435259

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435279

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435623

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435626

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435466

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435715

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435899

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435819

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436071

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435537

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435540

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

Reference Method: SM 2320 B-2011
Batch ID: P435583

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

Reference Method: SM 2320 B-2011
Batch ID: P435587

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

Reference Method: SM 2540 C-2015
Batch ID: P435728

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435684

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435686

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435586

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P435590

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435499

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

Reference Method: SM 5310 B-2011
Batch ID: P435667

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: P435259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435279

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435623

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435626

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435671

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435715

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435819

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436071

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435537

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435540

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

Reference Method: SM 2320 B-2011
Batch ID: P435583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.8		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P435587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P435728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	92.7		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P435684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.0		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P435686

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

Reference Method: SM 4500-F- C-2011
Batch ID: P435586

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P435590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.7		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435499

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

Reference Method: SM 5310 B-2011
Batch ID: P435667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438454	Chloride	103		P	90 - 110
2438524	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438454	Sulfate	103		P	90 - 110
2438524	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438461	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438469	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438196	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438432	Kjeldahl Nitrogen	97.4	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438467	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438458	Total-P	112	111	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438469	Total-P	105	105	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P435586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438695	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P435590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438194	Fluoride	97.2	98.0	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2437166	Organic Carbon	89.6	90.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P435667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2438467	Organic Carbon	95.6	96.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P435259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438466	Color (true)	1.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438456	Turbidity	4.44	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438454	Chloride	2.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438454	Sulfate	2.24	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438461	Ammonia-N	0.398	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438469	Ammonia-N	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438196	Kjeldahl Nitrogen	0.643	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438432	Kjeldahl Nitrogen	0.270	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438467	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438458	Total-P	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438469	Total-P	0.381	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P435583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438695	Total Alkalinity	0.360	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P435587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438194	Total Alkalinity	1.62	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P435728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438423	TDS	5.08	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438695	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P435590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438194	Fluoride	0.480	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P435499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2437166	Organic Carbon	0.452	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P435667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2438467	Organic Carbon	0.455	Spike	P	0 - 20

* 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: A121657

Included Lab Sample IDs: 2438466, 2438468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121661

Included Lab Sample IDs: 2438466, 2438468

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: A121752

Included Lab Sample IDs: 2438467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A121761

Included Lab Sample IDs: 2438469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.3	98.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121771

Included Lab Sample IDs: 2438466, 2438468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121790

Included Lab Sample IDs: 2438466, 2438468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	95.2	P/P	90 - 110
Total Alkalinity	98.2	95.3	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121790

Included Lab Sample IDs: 2438466, 2438468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110
Fluoride	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A121821

Included Lab Sample IDs: 2438467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	95.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121825

Included Lab Sample IDs: 2438469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121830

Included Lab Sample IDs: 2438467, 2438469

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110
Total-P	99.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121882

Included Lab Sample IDs: 2438469

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121888

Included Lab Sample IDs: 2438469

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121945

Included Lab Sample IDs: 2438467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.6	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121983

Included Lab Sample IDs: 2438467

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	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)	98.6			1.48	
EPA 180.1 Rev. 2.0	Turbidity	106			4.44	
EPA 300.0 Rev. 2.1	Chloride	101	103	105	2.03	
	Sulfate	102	103	104	2.24	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	100	101		0.398
	Ammonia-N	101	100	103		2.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	101		0.643
	Kjeldahl Nitrogen	98.2	97.4	97.7		0.270
EPA 353.2 Rev. 2.0	NO2NO3-N	100				
	NO2NO3-N	100	101	102		0.985
EPA 365.1 Rev. 2.0	Total-P	109	112	111		1.49
	Total-P	108	105	105		0.381
SM 2320 B-2011	Total Alkalinity	96.8			0.360	
	Total Alkalinity	96.8			1.62	
SM 2540 C-2015	TDS	92.7			5.08	
SM 2540 D-2015	TSS	91.0				
	TSS	93.1				
SM 4500-F- C-2011	Fluoride	101	101	101		0.0
	Fluoride	99.7	97.2	98.0		0.480
SM 5310 B-2011	Organic Carbon	98.2	89.6	90.1		0.452
	Organic Carbon	96.2	95.6	96.2		0.455

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2438466, 2438468
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2438466, 2438468
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2438466, 2438468
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2438466, 2438468
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2438467, 2438469
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2438467, 2438469
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2438467, 2438469
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2438467, 2438469
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2438466, 2438468
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2438466, 2438468
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2438466, 2438468
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2438466, 2438468
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2438467, 2438469

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	09/20/2023			09/20/2023 14:44	Samantha L Bates	2438466, 2438468
EPA 180.1 Rev. 2.0	09/20/2023			09/20/2023 13:15	Chandler E Cox	2438466
	09/20/2023			09/20/2023 13:16	Chandler E Cox	2438468
EPA 300.0 Rev. 2.1	09/20/2023			09/27/2023 03:47	James L Waggeberby	2438466
	09/20/2023			09/27/2023 04:02	James L Waggeberby	2438468
EPA 350.1 Rev. 2.0	09/20/2023			09/25/2023 12:45	Ping Hua	2438467
	09/20/2023			09/28/2023 11:49	Ping Hua	2438469
EPA 351.2 Rev. 2.0	09/20/2023	09/29/2023 10:15	Samantha L Bates	10/02/2023 14:03	Samantha L Bates	2438469
	09/20/2023	10/03/2023 17:00	Simonne.V. Calhoun	10/04/2023 11:44	Ping Hua	2438467
EPA 353.2 Rev. 2.0	09/20/2023			10/02/2023 14:20	Anna M. Plaviak	2438469
	09/20/2023			10/05/2023 13:08	Fadila Guebre	2438467
EPA 365.1 Rev. 2.0	09/20/2023	09/27/2023 14:07	Adam P Silver	09/28/2023 14:32	James L Waggeberby	2438467
	09/20/2023	09/27/2023 14:07	Adam P Silver	09/28/2023 15:04	James L Waggeberby	2438469
SM 2320 B-2011	09/20/2023			09/27/2023 00:44	Adam P Silver	2438466
	09/20/2023			09/27/2023 11:20	Adam P Silver	2438468
SM 2540 C-2015	09/20/2023			09/21/2023 16:01	Yijie Li	2438466, 2438468
SM 2540 D-2015	09/20/2023			09/21/2023 16:01	Yijie Li	2438466, 2438468
SM 4500-F- C-2011	09/20/2023			09/27/2023 00:44	Adam P Silver	2438466
	09/20/2023			09/27/2023 08:51	Adam P Silver	2438468
SM 5310 B-2011	09/20/2023			09/26/2023 05:51	Elise M. Gillis	2438469
	09/20/2023			09/28/2023 05:09	Khloe J Berg	2438467