Chemical Analysis Report

NW-DIST-2022-09-23-01

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

Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2022-09-19-35**
Customer: **NW-DIST**
Project ID: **SMP**

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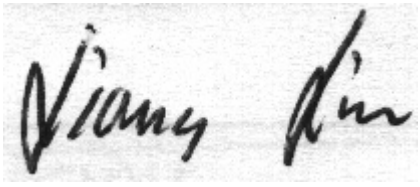

Case Narrative

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: Mack Bayou Center **Collection Date/Time: 09/21/2022 11:05**

Field ID: G3NW0185 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359029	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	81		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	3	I	mg/L	P420482	
	SM 4500-F- C-2011	Fluoride	0.63		mg F/L	P420431	
2359035	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P420128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P420449	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	5.4		mg C/L	P420539	

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: Hewett Bayou Center **Collection Date/Time: 09/21/2022 11:30**

Field ID: G3NW0218 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359030	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	3	I	mg/L	P420483	
	SM 4500-F- C-2011	Fluoride	0.54		mg F/L	P420431	
2359036	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P420200	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P420449	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P420388	

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: Churchill Bayou Center **Collection Date/Time: 09/21/2022 12:15**

Field ID: G3NW0235 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359031	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	10	I	mg/L	P420483	
	SM 4500-F- C-2011	Fluoride	0.64		mg F/L	P420431	
2359037	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P420200	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420449	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P420539	

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: Hogtown Bayou at Cessna Park **Collection Date/Time: 09/21/2022 12:30**

Field ID: G3NW0152 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359032	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	94		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	13		mg/L	P420483	
	SM 4500-F- C-2011	Fluoride	0.84		mg F/L	P420431	
2359038	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P420200	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P420449	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P420539	

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: Buck Bayou Center **Collection Date/Time: 09/21/2022 10:40**

Field ID: G3NW0233 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359033	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	85		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	4	I	mg/L	P420483	
	SM 4500-F- C-2011	Fluoride	0.73		mg F/L	P420431	
2359039	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P420128	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P420403	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P420539	

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: Mussett Bayou Center **Collection Date/Time: 09/21/2022 11:50**

Field ID: G3NW0234 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2359034	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P420048	
	SM 2320 B-2011	Total Alkalinity	81		mg CaCO3/L	P420429	
	SM 2540 D-2011	TSS	5	I A	mg/L	P420483	
	SM 4500-F- C-2011	Fluoride	0.70		mg F/L	P420431	
2359040	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P420736	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P420200	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P420403	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P420301	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P420539	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420048

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420736

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420200

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420403

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420449

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420301

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

Reference Method: SM 2320 B-2011
Batch ID: P420429

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

Reference Method: SM 2540 D-2011
Batch ID: P420482

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P420483

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P420388

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

Reference Method: SM 5310 B-2011
Batch ID: P420539

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420048

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420736

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420200

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420403

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420301

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

Reference Method: SM 2320 B-2011
Batch ID: P420429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P420388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P420539

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358988	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358021	Kjeldahl Nitrogen	90.6	92.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359038	Kjeldahl Nitrogen	96.8	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359039	NO2NO3-N	99.4	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358784	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359035	Total-P	101	98.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2358778	Fluoride	96.6	97.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P420388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359036	Organic Carbon	89.6	89.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P420539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2359035	Organic Carbon	91.5	93.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P420048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359072	Turbidity	5.66	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P420736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358988	Ammonia-N	0.481	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358021	Kjeldahl Nitrogen	1.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P420200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359038	Kjeldahl Nitrogen	6.10	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359039	NO2NO3-N	2.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P420449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358784	NO2NO3-N	0.873	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P420301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359035	Total-P	2.39	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P420429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358778	Total Alkalinity	0.243	Sample	P	0 - 3.8

Quality Assurance Report
Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P420431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2358778	Fluoride	0.513	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P420388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359036	Organic Carbon	0.330	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P420539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2359035	Organic Carbon	1.65	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: A114918
Included Lab Sample IDs: 2359029, 2359030, 2359031, 2359032, 2359033, 2359034

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115009
Included Lab Sample IDs: 2359035, 2359039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A115048
Included Lab Sample IDs: 2359035, 2359036, 2359037, 2359038, 2359039, 2359040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.8	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A115074
Included Lab Sample IDs: 2359036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	91.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115091
Included Lab Sample IDs: 2359039, 2359040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A115092
Included Lab Sample IDs: 2359036, 2359037, 2359038, 2359040

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

Reference Method: SM 2320 B-2011
Run ID: A115100
Included Lab Sample IDs: 2359029, 2359030, 2359031, 2359032, 2359033, 2359034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A115100
Included Lab Sample IDs: 2359029, 2359030, 2359031, 2359032, 2359033, 2359034

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	P/P	90 - 110
Fluoride	105	106	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A115117
Included Lab Sample IDs: 2359035, 2359036, 2359037, 2359038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A115145
Included Lab Sample IDs: 2359035, 2359037, 2359038, 2359039, 2359040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	95.4	P/P	90 - 110
Organic Carbon	98.8	93.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A115220
Included Lab Sample IDs: 2359035, 2359036, 2359037, 2359038, 2359039, 2359040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.7	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	101				5.66	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	104	104			0.481
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	90.6	92.1			1.09
	Kjeldahl Nitrogen	105	96.8	106			6.10
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.4	102			2.25
	NO2NO3-N	104	103	104			0.873
EPA 365.1 Rev. 2.0	Total-P	105	101	98.5			2.39
SM 2320 B-2011	Total Alkalinity	98.7				0.243	
SM 4500-F- C-2011	Fluoride	102	96.6	97.4			0.513
SM 5310 B-2011	Organic Carbon	97.1	89.6	89.9			0.330
	Organic Carbon	98.2	91.5	93.2			1.65

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2359029, 2359030, 2359031, 2359032, 2359033, 2359034
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2359035, 2359036, 2359037, 2359038, 2359039, 2359040
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2359035, 2359036, 2359037, 2359038, 2359039, 2359040
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2359035, 2359036, 2359037, 2359038, 2359039, 2359040
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2359035, 2359036, 2359037, 2359038, 2359039, 2359040
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2359029, 2359030, 2359031, 2359032, 2359033, 2359034
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2359029, 2359030, 2359031, 2359032, 2359033, 2359034
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2359029, 2359030, 2359031, 2359032, 2359033, 2359034
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2359035, 2359036, 2359037, 2359038, 2359039, 2359040

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	09/23/2022			09/23/2022 10:27	Chandler E Cox	2359032
	09/23/2022			09/23/2022 10:28	Chandler E Cox	2359029
	09/23/2022			09/23/2022 10:30	Chandler E Cox	2359030
	09/23/2022			09/23/2022 10:31	Chandler E Cox	2359033
	09/23/2022			09/23/2022 10:32	Chandler E Cox	2359034
	09/23/2022			09/23/2022 10:33	Chandler E Cox	2359031
EPA 350.1 Rev. 2.0	09/23/2022			10/11/2022 14:30	Judith K. Clark	2359035
	09/23/2022			10/11/2022 14:31	Judith K. Clark	2359036
	09/23/2022			10/11/2022 14:33	Judith K. Clark	2359037
	09/23/2022			10/11/2022 14:34	Judith K. Clark	2359038
	09/23/2022			10/11/2022 14:35	Judith K. Clark	2359039
	09/23/2022			10/11/2022 14:37	Judith K. Clark	2359040
EPA 351.2 Rev. 2.0	09/23/2022	09/27/2022 14:11	Samantha L Bates	09/28/2022 15:22	Samantha L Bates	2359035
	09/23/2022	09/27/2022 14:11	Samantha L Bates	09/28/2022 15:24	Samantha L Bates	2359039
	09/23/2022	09/28/2022 12:10	Alexandra J Mattheus	10/03/2022 14:54	Samantha L Bates	2359036
	09/23/2022	09/28/2022 12:10	Alexandra J Mattheus	10/03/2022 14:55	Samantha L Bates	2359037
	09/23/2022	09/28/2022 12:10	Alexandra J Mattheus	10/03/2022 14:57	Samantha L Bates	2359038
	09/23/2022	09/28/2022 12:10	Alexandra J Mattheus	10/03/2022 15:02	Samantha L Bates	2359040
EPA 353.2 Rev. 2.0	09/23/2022			10/03/2022 13:54	Judith K. Clark	2359039
	09/23/2022			10/03/2022 14:00	Judith K. Clark	2359040
	09/23/2022			10/04/2022 14:06	Judith K. Clark	2359035
	09/23/2022			10/04/2022 14:07	Judith K. Clark	2359036
	09/23/2022			10/04/2022 14:08	Judith K. Clark	2359037
	09/23/2022			10/04/2022 14:09	Judith K. Clark	2359038
EPA 365.1 Rev. 2.0	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:45	James L Waggerby	2359035
	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:46	James L Waggerby	2359036
	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:47	James L Waggerby	2359037
	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:48	James L Waggerby	2359038
	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:49	James L Waggerby	2359039
	09/23/2022	09/29/2022 14:45	Adam P Silver	09/30/2022 11:50	James L Waggerby	2359040
SM 2320 B-2011	09/23/2022			10/04/2022 06:22	Dale L. Simmons	2359029
	09/23/2022			10/04/2022 06:33	Dale L. Simmons	2359030
	09/23/2022			10/04/2022 06:45	Dale L. Simmons	2359031
	09/23/2022			10/04/2022 06:56	Dale L. Simmons	2359032
	09/23/2022			10/04/2022 07:08	Dale L. Simmons	2359033
	09/23/2022			10/04/2022 07:19	Dale L. Simmons	2359034
SM 2540 D-2011	09/23/2022			09/27/2022 15:36	Yijie Li	2359029, 2359030, 2359031, 2359032, 2359033, 2359034
SM 4500-F- C-2011	09/23/2022			10/04/2022 01:55	Dale L. Simmons	2359029
	09/23/2022			10/04/2022 02:00	Dale L. Simmons	2359030

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	09/23/2022			10/04/2022 02:36	Dale L. Simmons	2359031
	09/23/2022			10/04/2022 02:41	Dale L. Simmons	2359032
	09/23/2022			10/04/2022 02:46	Dale L. Simmons	2359033
	09/23/2022			10/04/2022 02:51	Dale L. Simmons	2359034
SM 5310 B-2011	09/23/2022			09/30/2022 05:52	Touraj Touran	2359036
	09/23/2022			10/05/2022 12:19	Touraj Touran	2359035
	09/23/2022			10/05/2022 16:18	Touraj Touran	2359037
	09/23/2022			10/05/2022 16:35	Touraj Touran	2359038
	09/23/2022			10/05/2022 16:53	Touraj Touran	2359039
	09/23/2022			10/05/2022 17:09	Touraj Touran	2359040