Chemical Analysis Report

NW-DIST-2023-11-03-01

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

Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2023-10-30-43**
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: Buck Bayou Center **Collection Date/Time: 11/02/2023 11:40**

Field ID: G3NW0233 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448708	DEP SOP: NU-094-1	Color (true)	3.1	I	PCU	P437351	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	1.6E+04		mg Cl/L	P437827	
		Sulfate	2.3E+03		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	99		mg CaCO3/L	P437533	
	SM 2540 C-2015	TDS	2.62E+04		mg/L	P437814	
	SM 2540 D-2015	TSS	3	I	mg/L	P437783	
	SM 4500-F- C-2011	Fluoride	0.96		mg F/L	P437535	
2448713	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P437429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P437456	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P437700	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P437656	
	SM 5310 B-2011	Organic Carbon	3.0	I	mg C/L	P437789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Hewett Bayou Center **Collection Date/Time: 11/02/2023 12:00**

Field ID: G3NW0218 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448709	DEP SOP: NU-094-1	Color (true)	3.7	I	PCU	P437351	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	1.6E+04		mg Cl/L	P437827	
		Sulfate	2.1E+03		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	97		mg CaCO3/L	P437533	
	SM 2540 C-2015	TDS	2.55E+04		mg/L	P437814	
	SM 2540 D-2015	TSS	3	U	mg/L	P437783	
	SM 4500-F- C-2011	Fluoride	0.93		mg F/L	P437535	
2448714	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P437429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P437456	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P437704	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P437656	
	SM 5310 B-2011	Organic Carbon	2.7	I	mg C/L	P437789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Churchill Bayou Center **Collection Date/Time: 11/02/2023 12:45**

Field ID: G3NW0235 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448710	DEP SOP: NU-094-1	Color (true)	4.3	I	PCU	P437351	
	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	1.6E+04		mg Cl/L	P437827	
		Sulfate	2.3E+03		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	98		mg CaCO3/L	P437533	
	SM 2540 C-2015	TDS	2.73E+04		mg/L	P437814	
	SM 2540 D-2015	TSS	6	I	mg/L	P437783	
	SM 4500-F- C-2011	Fluoride	0.95		mg F/L	P437535	
2448715	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P437429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P437456	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P437702	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P437656	
	SM 5310 B-2011	Organic Carbon	3.3	I	mg C/L	P437789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Mussett Bayou Center **Collection Date/Time: 11/02/2023 12:25**

Field ID: G3NW0234 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448711	DEP SOP: NU-094-1	Color (true)	2.9	I	PCU	P437351	
	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P437827	
		Sulfate	2.1E+03		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	93		mg CaCO3/L	P437533	
	SM 2540 C-2015	TDS	2.54E+04		mg/L	P437814	
	SM 2540 D-2015	TSS	6	I	mg/L	P437783	
	SM 4500-F- C-2011	Fluoride	0.87		mg F/L	P437535	
2448716	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P437429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P437456	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P437702	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P437656	
	SM 5310 B-2011	Organic Carbon	2.9	I	mg C/L	P437789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
SM 2540 D-2015: 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: 11/02/2023 13:01**

Field ID: G3NW0152 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2448712	DEP SOP: NU-094-1	Color (true)	5.2	I	PCU	P437351	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P437361	
	EPA 300.0 Rev. 2.1	Chloride	1.7E+04		mg Cl/L	P437827	
		Sulfate	2.4E+03		mg SO4/L	P437831	
	SM 2320 B-2011	Total Alkalinity	102		mg CaCO3/L	P437533	
	SM 2540 C-2015	TDS	2.74E+04		mg/L	P437814	
	SM 2540 D-2015	TSS	8	I A	mg/L	P437783	
	SM 4500-F- C-2011	Fluoride	0.98		mg F/L	P437535	
2448717	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P437843	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P437456	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P437702	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P437656	
	SM 5310 B-2011	Organic Carbon	3.2	I	mg C/L	P437789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of analytical difficulties.
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: P437351

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437429

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437843

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437456

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437702

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: P437704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437656

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

Reference Method: SM 2320 B-2011
Batch ID: P437533

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

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437783

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437535

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437789

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: P437351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437843

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437456

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437700

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: P437702

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: P437704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437656

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

Reference Method: SM 2320 B-2011
Batch ID: P437533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P437814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.2		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	109		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437535

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

Reference Method: SM 5310 B-2011
Batch ID: P437789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448639	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448639	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448451	Ammonia-N	97.2	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448828	Ammonia-N	99.0	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448605	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2447419	NO2NO3-N	98.6	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448715	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449250	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448606	Total-P	95.1	95.3	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P437535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448776	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448777	Organic Carbon	88.5	90.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448701	Color (true)	3.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448701	Turbidity	13.6	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448639	Chloride	0.762	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448639	Sulfate	0.880	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448451	Ammonia-N	1.41	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448828	Ammonia-N	0.264	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448605	Kjeldahl Nitrogen	6.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2447419	NO2NO3-N	2.16	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448715	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449250	NO2NO3-N	0.784	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448606	Total-P	0.210	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P437533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448776	Total Alkalinity	0.824	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P437814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448520	TDS	2.07	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448776	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P437789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448777	Organic Carbon	1.31	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: A122555
Included Lab Sample IDs: 2448708, 2448709, 2448710, 2448711, 2448712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A122557
Included Lab Sample IDs: 2448708, 2448709, 2448710, 2448711, 2448712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A122575
Included Lab Sample IDs: 2448713, 2448714, 2448715, 2448716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A122610
Included Lab Sample IDs: 2448708, 2448709, 2448710, 2448711, 2448712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Chloride	103	103	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110
Sulfate	104	103	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A122616
Included Lab Sample IDs: 2448708, 2448709, 2448710, 2448711, 2448712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	96.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A122616
Included Lab Sample IDs: 2448708, 2448709, 2448710, 2448711, 2448712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	103	P/P	90 - 110
Fluoride	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A122620
Included Lab Sample IDs: 2448713, 2448714, 2448715, 2448716, 2448717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.5	98.6	P/P	90 - 110
Kjeldahl Nitrogen	98.6	95.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A122696
Included Lab Sample IDs: 2448713, 2448714, 2448715, 2448716, 2448717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	99.5	P/P	90 - 110
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A122712
Included Lab Sample IDs: 2448713, 2448714, 2448715, 2448716, 2448717

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

Reference Method: SM 5310 B-2011
Run ID: A122725
Included Lab Sample IDs: 2448713, 2448714, 2448715, 2448716, 2448717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	94.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A122744
Included Lab Sample IDs: 2448717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	97.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	101				3.48	
EPA 180.1 Rev. 2.0	Turbidity	104				13.6	
EPA 300.0 Rev. 2.1	Chloride	103	105			0.762	
	Sulfate	103	105			0.880	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	97.2	99.0			1.41
	Ammonia-N	98.0	99.0	98.6			0.264
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	102	109			6.58
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	98.6	101			2.16
	NO2NO3-N	100	100	101			0.487
	NO2NO3-N	99.0	100	101			0.784
EPA 365.1 Rev. 2.0	Total-P	102	95.1	95.3			0.210
SM 2320 B-2011	Total Alkalinity	100				0.824	
SM 2540 C-2015	TDS	97.2				2.07	
SM 2540 D-2015	TSS	109					
SM 4500-F- C-2011	Fluoride	101	102	102			0.0
SM 5310 B-2011	Organic Carbon	94.4	88.5	90.0			1.31

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2448708, 2448709, 2448710, 2448711, 2448712
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2448708, 2448709, 2448710, 2448711, 2448712
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2448708, 2448709, 2448710, 2448711, 2448712
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2448708, 2448709, 2448710, 2448711, 2448712
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2448713, 2448714, 2448715, 2448716, 2448717
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2448713, 2448714, 2448715, 2448716, 2448717
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2448713, 2448714, 2448715, 2448716, 2448717
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2448713, 2448714, 2448715, 2448716, 2448717
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2448708, 2448709, 2448710, 2448711, 2448712
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2448708, 2448709, 2448710, 2448711, 2448712
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2448708, 2448709, 2448710, 2448711, 2448712
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2448708, 2448709, 2448710, 2448711, 2448712
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2448713, 2448714, 2448715, 2448716, 2448717

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	11/03/2023			11/03/2023 15:29	Chandler E Cox	2448708
	11/03/2023			11/03/2023 15:30	Chandler E Cox	2448709
	11/03/2023			11/03/2023 15:31	Chandler E Cox	2448710
	11/03/2023			11/03/2023 15:32	Chandler E Cox	2448711, 2448712
EPA 180.1 Rev. 2.0	11/03/2023			11/03/2023 14:39	Anna M. Plaviak	2448708
	11/03/2023			11/03/2023 14:40	Anna M. Plaviak	2448709
	11/03/2023			11/03/2023 14:42	Anna M. Plaviak	2448710
	11/03/2023			11/03/2023 14:43	Anna M. Plaviak	2448711
	11/03/2023			11/03/2023 14:44	Anna M. Plaviak	2448712
EPA 300.0 Rev. 2.1	11/03/2023			11/09/2023 13:56	James L Waggerby	2448708
	11/03/2023			11/09/2023 14:11	James L Waggerby	2448709
	11/03/2023			11/09/2023 14:26	James L Waggerby	2448710
	11/03/2023			11/09/2023 15:11	James L Waggerby	2448711
	11/03/2023			11/09/2023 15:26	James L Waggerby	2448712
EPA 350.1 Rev. 2.0	11/03/2023			11/06/2023 11:51	Khloe J Berg	2448713
	11/03/2023			11/06/2023 11:52	Khloe J Berg	2448714
	11/03/2023			11/06/2023 11:54	Khloe J Berg	2448715
	11/03/2023			11/06/2023 11:55	Khloe J Berg	2448716
	11/03/2023			11/15/2023 12:32	Ping Hua	2448717
EPA 351.2 Rev. 2.0	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 10:54	Samantha L Bates	2448713
	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 10:56	Samantha L Bates	2448714
	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 10:58	Samantha L Bates	2448715
	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 10:59	Samantha L Bates	2448716
	11/03/2023	11/07/2023 12:15	Simonne.V. Calhoun	11/08/2023 11:04	Samantha L Bates	2448717
EPA 353.2 Rev. 2.0	11/03/2023			11/13/2023 13:50	Fadila Guebre	2448713
	11/03/2023			11/13/2023 14:18	Fadila Guebre	2448715
	11/03/2023			11/13/2023 14:26	Fadila Guebre	2448716
	11/03/2023			11/13/2023 14:27	Fadila Guebre	2448717
	11/03/2023			11/13/2023 15:20	Fadila Guebre	2448714
EPA 365.1 Rev. 2.0	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 15:54	James L Waggerby	2448713
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 15:55	James L Waggerby	2448714
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 15:56	James L Waggerby	2448715
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 15:57	James L Waggerby	2448716
	11/03/2023	11/13/2023 13:18	Adam P Silver	11/14/2023 15:58	James L Waggerby	2448717
SM 2320 B-2011	11/03/2023			11/07/2023 02:12	Dale L. Simmons	2448708
	11/03/2023			11/07/2023 02:26	Dale L. Simmons	2448709
	11/03/2023			11/07/2023 02:39	Dale L. Simmons	2448710
	11/03/2023			11/07/2023 02:52	Dale L. Simmons	2448711
	11/03/2023			11/07/2023 03:06	Dale L. Simmons	2448712

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 C-2015	11/03/2023			11/07/2023 15:38	Yijie Li	2448708, 2448709, 2448710, 2448711, 2448712
SM 2540 D-2015	11/03/2023			11/07/2023 15:38	Yijie Li	2448708, 2448709, 2448710, 2448711, 2448712
SM 4500-F- C-2011	11/03/2023			11/07/2023 00:11	Dale L. Simmons	2448708
	11/03/2023			11/07/2023 00:17	Dale L. Simmons	2448709
	11/03/2023			11/07/2023 00:22	Dale L. Simmons	2448710
	11/03/2023			11/07/2023 00:28	Dale L. Simmons	2448711
	11/03/2023			11/07/2023 01:07	Dale L. Simmons	2448712
SM 5310 B-2011	11/03/2023			11/14/2023 03:16	Khloe J Berg	2448713
	11/03/2023			11/14/2023 03:31	Khloe J Berg	2448714
	11/03/2023			11/14/2023 03:56	Khloe J Berg	2448715
	11/03/2023			11/14/2023 04:09	Khloe J Berg	2448716
	11/03/2023			11/14/2023 04:24	Khloe J Berg	2448717