

Chemical Analysis Report

NW-DIST-2023-09-13-01

Florida DEP Laboratory
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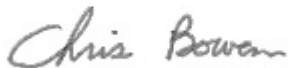
Event Description: **Hogtown Bayou Run**
Request ID: **RQ-2023-09-11-41**
Customer: **NW-DIST**
Project ID: **SMP**

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 02-OCT-2023 13:41



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: 09/12/2023 10:50

Field ID: G3NW0233

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436555	DEP SOP: NU-094-1	Color (true)	5.9	I	PCU	P434944	
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	1.4E+04		mg Cl/L	P435111	
		Sulfate	2.0E+03		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	93		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.42E+04		mg/L	P435389	
	SM 2540 D-2015	TSS	6	I	mg/L	P435304	
2436560	SM 4500-F- C-2011	Fluoride	0.87		mg F/L	P435066	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P435483	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P435399	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P435036	
	SM 5310 B-2011	Organic Carbon	3.0	I	mg C/L	P435374	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: CHURCHILL BAYOU CENTER

Collection Date/Time: 09/12/2023 11:50

Field ID: G3NW0235

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436556	DEP SOP: NU-094-1	Color (true)	9.4		PCU	P434944	
	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	1.4E+04		mg Cl/L	P435111	
		Sulfate	2.0E+03		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	91		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.44E+04		mg/L	P435389	
	SM 2540 D-2015	TSS	11		mg/L	P435304	
	SM 4500-F- C-2011	Fluoride	0.87		mg F/L	P435066	
2436561	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P435485	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P435399	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	5.9		mg C/L	P435374	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: MUSSETT BAYOU CENTER

Collection Date/Time: 09/12/2023 11:35

Field ID: G3NW0234

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436557	DEP SOP: NU-094-1	Color (true)	5.5	I	PCU	P434944	
	EPA 180.1 Rev. 2.0	Turbidity	5.7		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P435111	
		Sulfate	2.1E+03		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	94		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.54E+04		mg/L	P435389	
	SM 2540 D-2015	TSS	12		mg/L	P435304	
2436562	SM 4500-F- C-2011	Fluoride	0.90		mg F/L	P435066	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P435549	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P435399	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	2.7	I	mg C/L	P435374	

Ref. Method and Comment:

SM 2320 B-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: 09/12/2023 12:00

Field ID: G3NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436558	DEP SOP: NU-094-1	Color (true)	5.7	I	PCU	P434945	
	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P435111	
		Sulfate	2.2E+03		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	93		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.45E+04		mg/L	P435389	
	SM 2540 D-2015	TSS	14	A	mg/L	P435304	
2436563	SM 4500-F- C-2011	Fluoride	0.91		mg F/L	P435066	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P435549	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P435632	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P435499	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: HEWETT BAYOU CENTER

Collection Date/Time: 09/12/2023 11:15

Field ID: G3NW0218

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2436559	DEP SOP: NU-094-1	Color (true)	5.0	I	PCU	P434945	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P434940	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P435111	
		Sulfate	2.1E+03		mg SO4/L	P435115	
	SM 2320 B-2011	Total Alkalinity	92		mg CaCO3/L	P435062	
	SM 2540 C-2015	TDS	2.53E+04		mg/L	P435390	
	SM 2540 D-2015	TSS	8	I	mg/L	P435304	
2436564	SM 4500-F- C-2011	Fluoride	0.88		mg F/L	P435066	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P435138	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P435549	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P435632	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P435037	
	SM 5310 B-2011	Organic Carbon	3.9	I	mg C/L	P435499	

Ref. Method and Comment:

SM 2320 B-2011: 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: P434944

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P434945

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434940

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435483

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435485

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435399

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435036

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

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

Reference Method: SM 2320 B-2011
Batch ID: P435062

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

Reference Method: SM 2540 C-2015
Batch ID: P435389

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P435390

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P435304

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P435374

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

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

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: P434944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P434945

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: P434940

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

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: P435483

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435485

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435399

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435036

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

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

Reference Method: SM 2320 B-2011
Batch ID: P435062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P435389

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

Reference Method: SM 2540 C-2015
Batch ID: P435390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.9		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P435304

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.6		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P435374

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

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436448	Chloride	104		P	90 - 110
2436595	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436448	Sulfate	101		P	90 - 110
2436595	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436560	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436204	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436226	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436522	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436225	NO2NO3-N	98.0	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436563	NO2NO3-N	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436521	Total-P	99.7	99.2	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436653	Total-P	100	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434151	Fluoride	102	103	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2436509	Organic Carbon	86.7	87.1	P/P	85 - 115

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

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436499	Color (true)	0.193	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P434945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436598	Color (true)	2.99	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436306	Turbidity	0.778	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436448	Chloride	0.190	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436448	Sulfate	0.732	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436560	Ammonia-N	1.50	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436204	Kjeldahl Nitrogen	1.69	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436226	Kjeldahl Nitrogen	0.435	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436522	Kjeldahl Nitrogen	1.83	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436225	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436563	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436521	Total-P	0.507	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436653	Total-P	2.42	Spike	P	0 - 20

Reference Method: SM 2540 C-2015
Batch ID: P435389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436430	TDS	7.67	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P435390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436917	TDS	5.85	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P435304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436558	TSS	5.71	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P435066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434151	Fluoride	0.473	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2436509	Organic Carbon	0.343	Spike	P	0 - 20

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

* 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: A121509

Included Lab Sample IDs: 2436555, 2436556, 2436557, 2436558, 2436559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.0	97.0	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A121511

Included Lab Sample IDs: 2436555, 2436556, 2436557, 2436558, 2436559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	99.9	P/P	90 - 110
Color (true)	99.9	99.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121560

Included Lab Sample IDs: 2436555, 2436556, 2436557, 2436558, 2436559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	97.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121560

Included Lab Sample IDs: 2436555, 2436556, 2436557, 2436558, 2436559

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121585

Included Lab Sample IDs: 2436555, 2436556, 2436557, 2436558, 2436559

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121599

Included Lab Sample IDs: 2436560, 2436561, 2436562, 2436563, 2436564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121626

Included Lab Sample IDs: 2436560, 2436561, 2436562, 2436563, 2436564

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

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A121712

Included Lab Sample IDs: 2436560, 2436561, 2436562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121724

Included Lab Sample IDs: 2436560, 2436561, 2436562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A121761

Included Lab Sample IDs: 2436563, 2436564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121802

Included Lab Sample IDs: 2436560, 2436561

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	105	P/P	90 - 110
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121809

Included Lab Sample IDs: 2436563, 2436564

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121817

Included Lab Sample IDs: 2436562, 2436563, 2436564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	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)	99.6			0.193	
	Color (true)	101			2.99	
EPA 180.1 Rev. 2.0	Turbidity	101			0.778	
EPA 300.0 Rev. 2.1	Chloride	104	104	105	0.190	
	Sulfate	102	101	102	0.732	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.0	101		1.50
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	102	100		1.69
	Kjeldahl Nitrogen	99.8	106	106		0.435
	Kjeldahl Nitrogen	102	104	106		1.83
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.0	98.6		0.491
	NO2NO3-N	99.5	99.6	100		0.484
EPA 365.1 Rev. 2.0	Total-P	106	99.7	99.2		0.507
	Total-P	107	100	103		2.42
SM 2320 B-2011	Total Alkalinity	97.3				
SM 2540 C-2015	TDS	103			7.67	
	TDS	94.9			5.85	
SM 2540 D-2015	TSS	94.6			5.71	
SM 4500-F- C-2011	Fluoride	99.3	102	103		0.473
SM 5310 B-2011	Organic Carbon	97.2	86.7	87.1		0.343
	Organic Carbon	98.2	89.6	90.1		0.452

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2436555, 2436556, 2436557, 2436558, 2436559
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2436555, 2436556, 2436557, 2436558, 2436559
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2436555, 2436556, 2436557, 2436558, 2436559
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2436555, 2436556, 2436557, 2436558, 2436559
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2436560, 2436561, 2436562, 2436563, 2436564
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2436560, 2436561, 2436562, 2436563, 2436564
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2436560, 2436561, 2436562, 2436563, 2436564
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2436560, 2436561, 2436562, 2436563, 2436564
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2436555, 2436556, 2436557, 2436558, 2436559
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2436555, 2436556, 2436557, 2436558, 2436559
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2436555, 2436556, 2436557, 2436558, 2436559
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2436555, 2436556, 2436557, 2436558, 2436559
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2436560, 2436561, 2436562, 2436563, 2436564

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	09/13/2023			09/13/2023 16:20	Alexis Price	2436555, 2436556
	09/13/2023			09/13/2023 16:21	Alexis Price	2436557
	09/13/2023			09/13/2023 16:25	Alexis Price	2436558
	09/13/2023			09/13/2023 16:26	Alexis Price	2436559
EPA 180.1 Rev. 2.0	09/13/2023			09/13/2023 14:34	Alexis Price	2436555, 2436556
	09/13/2023			09/13/2023 14:35	Alexis Price	2436557, 2436558
	09/13/2023			09/13/2023 14:36	Alexis Price	2436559
EPA 300.0 Rev. 2.1	09/13/2023			09/16/2023 11:54	James L Waggeberby	2436555
	09/13/2023			09/16/2023 12:09	James L Waggeberby	2436556
	09/13/2023			09/16/2023 12:24	James L Waggeberby	2436557
	09/13/2023			09/16/2023 12:39	James L Waggeberby	2436558
EPA 350.1 Rev. 2.0	09/13/2023			09/16/2023 12:54	James L Waggeberby	2436559
	09/13/2023			09/18/2023 11:40	Ping Hua	2436560
	09/13/2023			09/18/2023 11:44	Ping Hua	2436561
	09/13/2023			09/18/2023 11:45	Ping Hua	2436562
	09/13/2023			09/18/2023 11:46	Ping Hua	2436563
EPA 351.2 Rev. 2.0	09/13/2023			09/18/2023 11:48	Ping Hua	2436564
	09/13/2023	09/26/2023 11:45	Simonne.V. Calhoun	09/27/2023 15:12	Samantha L Bates	2436560
	09/13/2023	09/26/2023 11:48	Simonne.V. Calhoun	09/27/2023 16:04	Samantha L Bates	2436561
	09/13/2023	09/27/2023 10:09	Simonne.V. Calhoun	09/28/2023 10:37	Samantha L Bates	2436562
	09/13/2023	09/27/2023 10:09	Simonne.V. Calhoun	09/28/2023 10:39	Samantha L Bates	2436563
EPA 353.2 Rev. 2.0	09/13/2023	09/27/2023 10:09	Simonne.V. Calhoun	09/28/2023 10:40	Samantha L Bates	2436564
	09/13/2023			09/21/2023 15:35	Anna M. Plaviak	2436560
	09/13/2023			09/21/2023 15:36	Anna M. Plaviak	2436561
	09/13/2023			09/21/2023 15:38	Anna M. Plaviak	2436562
	09/13/2023			09/26/2023 11:33	Anna M. Plaviak	2436563
EPA 365.1 Rev. 2.0	09/13/2023			09/26/2023 11:39	Anna M. Plaviak	2436564
	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:14	James L Waggeberby	2436560
	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:20	James L Waggeberby	2436561
	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:21	James L Waggeberby	2436562
	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:22	James L Waggeberby	2436563
SM 2320 B-2011	09/13/2023	09/15/2023 14:15	Adam P Silver	09/19/2023 14:30	James L Waggeberby	2436564
	09/13/2023			09/14/2023 23:00	Dale L. Simmons	2436555
	09/13/2023			09/14/2023 23:14	Dale L. Simmons	2436556
	09/13/2023			09/14/2023 23:28	Dale L. Simmons	2436557
	09/13/2023			09/14/2023 23:42	Dale L. Simmons	2436558
SM 2540 C-2015	09/13/2023			09/14/2023 23:56	Dale L. Simmons	2436559
	09/13/2023			09/15/2023 16:01	Yijie Li	2436555, 2436556, 2436557, 2436558, 2436559

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2015	09/13/2023			09/15/2023 16:01	Yijie Li	2436555, 2436556, 2436557, 2436558, 2436559
SM 4500-F- C-2011	09/13/2023			09/14/2023 20:42	Dale L. Simmons	2436555
	09/13/2023			09/14/2023 20:47	Dale L. Simmons	2436556
	09/13/2023			09/14/2023 20:53	Dale L. Simmons	2436557
	09/13/2023			09/14/2023 20:58	Dale L. Simmons	2436558
SM 5310 B-2011	09/13/2023			09/14/2023 21:04	Dale L. Simmons	2436559
	09/13/2023			09/22/2023 04:25	Elise M. Gillis	2436560
	09/13/2023			09/22/2023 04:50	Elise M. Gillis	2436561
	09/13/2023			09/22/2023 05:11	Elise M. Gillis	2436562
	09/13/2023			09/26/2023 01:08	Elise M. Gillis	2436563
	09/13/2023			09/26/2023 01:26	Elise M. Gillis	2436564