

Chemical Analysis Report

NW-DIST-2022-08-18-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Hogtown Car Run**
Request ID: **RQ-2022-08-15-28**
Customer: **NW-DIST**
Project ID: **SMP**

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Date Certified: 14-SEP-2022 12:10



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: Hogtown Drain above Chat Holly Rd

Collection Date/Time: 08/17/2022 10:45

Field ID: G3NW0241

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350682	DEP SOP: NU-094-1	Color (true)	110		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P418969	
		Sulfate	1.8		mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	9.3		mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	64		mg/L	P418837	
	SM 2540 D-2011	TSS	6	I	mg/L	P418685	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350687	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P419093	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P418660	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P418515	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P418824	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Hogtown Drainage at Churchill Bayou Road

Collection Date/Time: 08/17/2022 10:55

Field ID: G3NW0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350683	DEP SOP: NU-094-1	Color (true)	210		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P418969	
		Sulfate	2.5		mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	97		mg/L	P418837	
	SM 2540 D-2011	TSS	5	I	mg/L	P418685	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350688	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P419093	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P418660	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P418515	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P418824	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Drain to Musset Bayou upstream of Don Bishop Rd

Collection Date/Time: 08/17/2022 11:15

Field ID: G3NW0240

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350684	DEP SOP: NU-094-1	Color (true)	78		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P418969	
		Sulfate	2.2		mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	13		mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	79		mg/L	P418837	
	SM 2540 D-2011	TSS	3	I	mg/L	P418685	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350689	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P419093	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P418660	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P418515	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P418824	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Direct Runoff to Bay off of Roberts Rd

Collection Date/Time: 08/17/2022 11:35

Field ID: G3NW0239

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350685	DEP SOP: NU-094-1	Color (true)	130		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P418969	
		Sulfate	0.32	I	mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	41		mg/L	P418837	
	SM 2540 D-2011	TSS	5	I	mg/L	P418685	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350690	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P418510	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P418660	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P418515	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P418824	

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: Drain to Hewett Bayou

Collection Date/Time: 08/17/2022 11:55

Field ID: G3NW0238

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350686	DEP SOP: NU-094-1	Color (true)	76		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	23	A	mg Cl/L	P418969	
		Sulfate	2.7	A	mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	34		mg CaCO3/L	P418456	
	SM 2540 C-2011	TDS	97		mg/L	P418837	
	SM 2540 D-2011	TSS	5	I	mg/L	P418685	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P418466	
2350691	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P418738	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P418510	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P418660	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P418515	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P418824	

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: Drain to Mack Bayou at Mack Bayou Rd

Collection Date/Time: 08/17/2022 12:15

Field ID: G3NW0237

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2350680	DEP SOP: NU-094-1	Color (true)	68		PCU	P418341	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P418347	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+03		mg Cl/L	P418969	
		Sulfate	280		mg SO4/L	P418972	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P418463	
	SM 2540 C-2011	TDS	3.50E+03		mg/L	P418838	
	SM 2540 D-2011	TSS	3	I	mg/L	P418688	
	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P419391	
2350681	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P418539	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P418507	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P418467	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P418514	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P418503	

Ref. Method and Comment:

SM 2540 C-2011: The reported result is consistent with the conductivity measured in the laboratory, 7050 umhos/cm.

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: DEP SOP: NU-094-1
Batch ID: P418341

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418347

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418969

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418972

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419093

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: P418467

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418660

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418515

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

Reference Method: SM 2320 B-2011
Batch ID: P418456

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

Reference Method: SM 2320 B-2011
Batch ID: P418463

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

Reference Method: SM 2540 C-2011
Batch ID: P418837

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P418838

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418685

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P418688

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419391

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P418503

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

Reference Method: SM 5310 B-2011
Batch ID: P418824

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: P418341

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: P418347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418660

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418515

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

Reference Method: SM 2320 B-2011
Batch ID: P418456

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

Reference Method: SM 2320 B-2011
Batch ID: P418463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

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

Reference Method: SM 4500-F- C-2011
Batch ID: P419391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418503

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P418824

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350686	Chloride	95.0		P	90 - 110
2350892	Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350686	Sulfate	95.3		P	90 - 110
2350892	Sulfate	93.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350387	Ammonia-N	98.4	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2349678	Ammonia-N	102	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2347656	Kjeldahl Nitrogen	98.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350542	Kjeldahl Nitrogen	109	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350386	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350723	NO2NO3-N	98.5	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350116	Total-P	98.3	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350689	Total-P	102	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350630	Fluoride	102	101	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P419391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2352507	Fluoride	97.9	98.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P418503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2349551	Organic Carbon	94.2	94.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P418824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2350691	Organic Carbon	98.2	98.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P418341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350629	Color (true)	1.52	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P418347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350628	Turbidity	6.60	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350686	Chloride	0.0259	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350686	Sulfate	0.438	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350387	Ammonia-N	3.12	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P418738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2349678	Ammonia-N	3.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2347656	Kjeldahl Nitrogen	0.394	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P418510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350542	Kjeldahl Nitrogen	2.00	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350543	Kjeldahl Nitrogen	0.327	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350386	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P418660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350723	NO2NO3-N	2.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350116	Total-P	0.780	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P418515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350689	Total-P	0.522	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P418456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350630	Total Alkalinity	1.01	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P418463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350482	Total Alkalinity	1.02	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P418837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350478	TDS	5.97	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P418838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350722	TDS	1.60	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P418466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350630	Fluoride	0.484	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P419391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2352507	Fluoride	0.509	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P418503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2349551	Organic Carbon	0.0840	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P418824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2350691	Organic Carbon	0.164	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: A114192

Included Lab Sample IDs: 2350680, 2350682, 2350683, 2350684, 2350685, 2350686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110
Color (true)	98.8	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114195

Included Lab Sample IDs: 2350680, 2350682, 2350683, 2350684, 2350685, 2350686

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

Reference Method: SM 2320 B-2011

Run ID: A114240

Included Lab Sample IDs: 2350680, 2350682, 2350683, 2350684, 2350685, 2350686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	96.7	P/P	90 - 110
Total Alkalinity	96.7	99.1	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114240

Included Lab Sample IDs: 2350682, 2350683, 2350684, 2350685, 2350686

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114243

Included Lab Sample IDs: 2350681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114255

Included Lab Sample IDs: 2350681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114274

Included Lab Sample IDs: 2350681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114329

Included Lab Sample IDs: 2350687, 2350688, 2350689, 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114329

Included Lab Sample IDs: 2350687, 2350688, 2350689, 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114337

Included Lab Sample IDs: 2350681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114348

Included Lab Sample IDs: 2350681, 2350687, 2350688, 2350689, 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110
Total-P	99.0	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114376

Included Lab Sample IDs: 2350687, 2350688, 2350689, 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114411

Included Lab Sample IDs: 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	95.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114412

Included Lab Sample IDs: 2350687, 2350688, 2350689, 2350690, 2350691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.0	P/P	90 - 110
Organic Carbon	96.0	96.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A114446

Included Lab Sample IDs: 2350680, 2350682, 2350683, 2350684, 2350685, 2350686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	99.6	P/P	90 - 110
Chloride	99.6	99.6	P/P	90 - 110
Sulfate	98.2	99.2	P/P	90 - 110
Sulfate	99.2	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114569

Included Lab Sample IDs: 2350687, 2350688, 2350689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	103	P/P	90 - 110
Kjeldahl Nitrogen	99.1	106	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114660

Included Lab Sample IDs: 2350680

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	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)	101			1.52	
EPA 180.1 Rev. 2.0	Turbidity	96.4			6.60	
EPA 300.0 Rev. 2.1	Chloride	99.4	95.0	96.6	0.0259	
	Sulfate	97.8	95.3	93.5	0.438	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.4	104		3.12
	Ammonia-N	95.6	102	106		3.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	98.8	99.3		0.394
	Kjeldahl Nitrogen	100	109	105		2.00
	Kjeldahl Nitrogen	98.5				0.327
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101	101		0.480
	NO2NO3-N	98.0	98.5	96.5		2.05
EPA 365.1 Rev. 2.0	Total-P	103	98.3	99.1		0.780
	Total-P	104	102	103		0.522
SM 2320 B-2011	Total Alkalinity	99.7			1.01	
	Total Alkalinity	99.5			1.02	
SM 2540 C-2011	TDS				5.97	
	TDS				1.60	
SM 4500-F- C-2011	Fluoride	102	102	101		0.484
	Fluoride	101	97.9	98.7		0.509
SM 5310 B-2011	Organic Carbon	96.2	94.2	94.3		0.0840
	Organic Carbon	96.1	98.2	98.0		0.164

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2350681, 2350687, 2350688, 2350689, 2350690, 2350691
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2350681, 2350687, 2350688, 2350689, 2350690, 2350691
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2350681, 2350687, 2350688, 2350689, 2350690, 2350691
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2350681, 2350687, 2350688, 2350689, 2350690, 2350691
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2350681, 2350687, 2350688, 2350689, 2350690, 2350691

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	08/18/2022			08/18/2022 16:04	Anna M. Plaviak	2350680, 2350682
	08/18/2022			08/18/2022 16:06	Anna M. Plaviak	2350684
	08/18/2022			08/18/2022 16:07	Anna M. Plaviak	2350685, 2350686
	08/18/2022			08/18/2022 16:18	Anna M. Plaviak	2350683
EPA 180.1 Rev. 2.0	08/18/2022			08/18/2022 14:51	Khloe J Berg	2350680
	08/18/2022			08/18/2022 14:54	Khloe J Berg	2350683
	08/18/2022			08/18/2022 14:56	Khloe J Berg	2350682
	08/18/2022			08/18/2022 14:57	Khloe J Berg	2350684
EPA 300.0 Rev. 2.1	08/18/2022			08/18/2022 14:58	Khloe J Berg	2350685
	08/18/2022			08/18/2022 14:59	Khloe J Berg	2350686
	08/18/2022			08/31/2022 14:13	Anna M. Plaviak	2350686
	08/18/2022			08/31/2022 16:34	Anna M. Plaviak	2350680
EPA 350.1 Rev. 2.0	08/18/2022			08/31/2022 16:48	Anna M. Plaviak	2350682
	08/18/2022			08/31/2022 17:30	Anna M. Plaviak	2350683
	08/18/2022			08/31/2022 17:44	Anna M. Plaviak	2350684
	08/18/2022			08/31/2022 17:58	Anna M. Plaviak	2350685
EPA 351.2 Rev. 2.0	08/18/2022			08/23/2022 14:43	Judith K. Clark	2350681
	08/18/2022			08/26/2022 10:52	Judith K. Clark	2350687
	08/18/2022			08/26/2022 10:53	Judith K. Clark	2350688
	08/18/2022			08/26/2022 10:54	Judith K. Clark	2350689
EPA 353.2 Rev. 2.0	08/18/2022			08/26/2022 10:56	Judith K. Clark	2350690
	08/18/2022			08/26/2022 10:57	Judith K. Clark	2350691
	08/18/2022	08/24/2022 13:30	Alexandra J Mattheus	08/29/2022 12:22	Alexandra J Mattheus	2350690
	08/18/2022	08/24/2022 13:30	Alexandra J Mattheus	08/29/2022 12:24	Alexandra J Mattheus	2350691
EPA 365.1 Rev. 2.0	08/18/2022	08/24/2022 13:32	Alexandra J Mattheus	08/25/2022 11:46	Samantha L Bates	2350681
	08/18/2022	09/06/2022 14:30	Alexandra J Mattheus	09/07/2022 09:16	Alexandra J Mattheus	2350687
	08/18/2022	09/06/2022 14:30	Alexandra J Mattheus	09/07/2022 09:35	Alexandra J Mattheus	2350688
	08/18/2022	09/06/2022 14:30	Alexandra J Mattheus	09/07/2022 09:37	Alexandra J Mattheus	2350689
EPA 365.1 Rev. 2.0	08/18/2022			08/22/2022 11:11	Beverly Y. Sanders	2350681
	08/18/2022			08/25/2022 10:17	Beverly Y. Sanders	2350687
	08/18/2022			08/25/2022 10:19	Beverly Y. Sanders	2350688
	08/18/2022			08/25/2022 10:20	Beverly Y. Sanders	2350689
EPA 365.1 Rev. 2.0	08/18/2022			08/25/2022 10:21	Beverly Y. Sanders	2350690
	08/18/2022			08/25/2022 10:22	Beverly Y. Sanders	2350691
	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:39	James L Waggeberby	2350681
	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:42	James L Waggeberby	2350689
EPA 365.1 Rev. 2.0	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:44	James L Waggeberby	2350687
	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:52	James L Waggeberby	2350688
	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:53	James L Waggeberby	2350690
	08/18/2022	08/24/2022 15:20	Simonne.V. Calhoun	08/25/2022 14:54	James L Waggeberby	2350691

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	08/18/2022			08/20/2022 05:12	Adam P Silver	2350682
	08/18/2022			08/20/2022 05:25	Adam P Silver	2350683
	08/18/2022			08/20/2022 05:37	Adam P Silver	2350684
	08/18/2022			08/20/2022 05:44	Adam P Silver	2350685
	08/18/2022			08/20/2022 05:57	Adam P Silver	2350686
	08/18/2022			08/20/2022 09:23	Adam P Silver	2350680
	08/18/2022			08/23/2022 13:01	Yijie Li	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 2540 D-2011	08/18/2022			08/23/2022 13:01	Yijie Li	2350680, 2350682, 2350683, 2350684, 2350685, 2350686
SM 4500-F- C-2011	08/18/2022			08/20/2022 05:12	Adam P Silver	2350682
	08/18/2022			08/20/2022 05:25	Adam P Silver	2350683
	08/18/2022			08/20/2022 05:37	Adam P Silver	2350684
	08/18/2022			08/20/2022 05:44	Adam P Silver	2350685
	08/18/2022			08/20/2022 05:57	Adam P Silver	2350686
	08/18/2022			09/09/2022 21:05	Dale L. Simmons	2350680
	08/18/2022			08/23/2022 07:06	Khloe J Berg	2350681
SM 5310 B-2011	08/18/2022			08/29/2022 14:48	Khloe J Berg	2350691
	08/18/2022			08/29/2022 18:29	Khloe J Berg	2350687
	08/18/2022			08/29/2022 18:43	Khloe J Berg	2350688
	08/18/2022			08/29/2022 18:58	Khloe J Berg	2350689
	08/18/2022			08/29/2022 19:12	Khloe J Berg	2350690
	08/18/2022					