

Chemical Analysis Report

NE-DIST-2022-02-02-01

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

Event Description: **Bmap 1 SMP Butcher Pen**
Request ID: **RQ-2022-01-31-51**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Attn: Jeremy Parrish

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 24-FEB-2022 12:53

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Butcher Pen CR @ Confederate PT Road

Collection Date/Time: 02/01/2022 14:40

Field ID: 20030082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302995	DEP SOP: NU-094-1	Color (true)**	60		PCU	P409354	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P409359	
	EPA 300.0 Rev. 2.1	Chloride	2.9E+03		mg Cl/L	P409771	
		Sulfate	420		mg SO4/L	P409479	
	SM 2320 B-2011	Total Alkalinity	92		mg CaCO3/L	P409546	
	SM 2540 C-2011	TDS	4.77E+03		mg/L	P409806	
	SM 2540 D-2011	TSS	6	I	mg/L	P409808	
2302997	SM 4500 F-C-2011	Fluoride	0.26		mg F/L	P409549	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P409634	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P409357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P409380	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P409333	
2302999	SM 5310 B-2011	Organic Carbon	10		mg C/L	P409976	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P409344	

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: Equipment Blank

Collection Date/Time: 02/01/2022 14:50

Field ID: EB02012022

Matrix: W-EQPMT-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2302996	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P409354	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P409359	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P409477	
		Sulfate	0.20	U	mg SO4/L	P409479	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P409546	
	SM 2540 C-2011	TDS	15	U	mg/L	P409805	
	SM 2540 D-2011	TSS	2	U	mg/L	P409807	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P409549	
2302998	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P409637	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P409426	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P409517	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P409510	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P409976	
2303000	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409344	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P409354

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409771

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409634

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409637

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409357

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409426

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: P409380

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409510

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P409546

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

Reference Method: SM 2540 C-2011
Batch ID: P409805

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P409806

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P409807

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P409808

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P409976

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: P409354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.0		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

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: P409477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409771

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409634

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409637

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	90.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409357

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409426

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

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: P409517

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

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: P409510

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

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

Reference Method: SM 2320 B-2011
Batch ID: P409546

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P409976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302705	Chloride	92.6		P	90 - 110
2302862	Chloride	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302705	Sulfate	94.5		P	90 - 110
2302862	Sulfate	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303352	Chloride	100		P	90 - 110
2303444	Chloride	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301967	Ammonia-N	97.8	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409637

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302706	Ammonia-N	96.8	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302814	Kjeldahl Nitrogen	100	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303317	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302997	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303009	NO2NO3-N	98.6	98.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303006	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409510

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303194	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302954	O-Phosphate-P	98.0	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2303494	Fluoride	96.2	97.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P409976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2302865	Organic Carbon	90.9	91.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P409354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302938	Color (true)	1.33	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302863	Turbidity	0.292	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	Chloride	0.974	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	Sulfate	1.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303352	Chloride	0.270	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301967	Ammonia-N	0.716	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409637

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302706	Ammonia-N	0.965	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302814	Kjeldahl Nitrogen	5.35	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303317	Kjeldahl Nitrogen	0.911	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302997	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P409517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303009	NO2NO3-N	0.447	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303006	Total-P	1.06	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409510

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303194	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302954	O-Phosphate-P	0.255	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P409546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303494	Total Alkalinity	1.12	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P409805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302705	TDS	2.61	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P409806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302832	TDS	5.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P409549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2303494	Fluoride	0.993	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P409976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2302865	Organic Carbon	0.408	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110154

Included Lab Sample IDs: 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	99.3	P/P	90 - 110
Sulfate	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A110180

Included Lab Sample IDs: 2302999, 2303000

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

Reference Method: DEP SOP: NU-094-1

Run ID: A110184

Included Lab Sample IDs: 2302995, 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110185

Included Lab Sample IDs: 2302995, 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110192

Included Lab Sample IDs: 2302997

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110264

Included Lab Sample IDs: 2302998

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110269

Included Lab Sample IDs: 2302997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A110279

Included Lab Sample IDs: 2302995, 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A110279

Included Lab Sample IDs: 2302995, 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	96.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110279

Included Lab Sample IDs: 2302995, 2302996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.1	P/P	90 - 110
Fluoride	99.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110285

Included Lab Sample IDs: 2302997

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110303

Included Lab Sample IDs: 2302998

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110313

Included Lab Sample IDs: 2302997, 2302998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.4	94.7	P/P	90 - 110
Ammonia-N	98.8	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110324

Included Lab Sample IDs: 2302998

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110370

Included Lab Sample IDs: 2302995

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

Reference Method: SM 5310 B-2011

Run ID: A110463

Included Lab Sample IDs: 2302997, 2302998

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

Reference Method: SM 5310 B-2011

Run ID: A110463

Included Lab Sample IDs: 2302997, 2302998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.7	93.4	P/P	90 - 110
Organic Carbon	93.4	93.6	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)	99.0			1.33	
EPA 180.1 Rev. 2.0	Turbidity	96.4			0.292	
EPA 300.0 Rev. 2.1	Chloride	99.1	92.6	94.5	0.974	
	Chloride	101	100	100	0.270	
	Sulfate	96.9	94.5	94.5	1.26	
EPA 350.1 Rev. 2.0	Ammonia-N	95.0	97.8	99.0		0.716
	Ammonia-N	90.6	95.2	96.8		0.965
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	100	107		5.35
	Kjeldahl Nitrogen	103	105	103		0.911
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	100		0.0
	NO2NO3-N	100	98.6	98.1		0.447
EPA 365.1 Rev. 2.0	Total-P	103	101	102		1.06
	Total-P	104	107	107		0.0
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.0	97.7		0.255
SM 2320 B-2011	Total Alkalinity	100			1.12	
SM 2540 C-2011	TDS				2.61	
	TDS				5.84	
SM 4500 F-C-2011	Fluoride	97.3	96.2	97.8		0.993
SM 5310 B-2011	Organic Carbon	92.1	90.9	91.5		0.408

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2302995, 2302996
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2302995, 2302996
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2302995, 2302996
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2302995, 2302996
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2302997, 2302998
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2302997, 2302998
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2302997, 2302998
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2302997, 2302998
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2302999, 2303000
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2302995, 2302996
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2302995, 2302996
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2302995, 2302996
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2302995, 2302996
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2302997, 2302998

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	02/02/2022			02/02/2022 15:40	Anna M. Plaviak	2302995, 2302996
EPA 180.1 Rev. 2.0	02/02/2022			02/02/2022 14:46	Khloe J Berg	2302995
	02/02/2022			02/02/2022 14:47	Khloe J Berg	2302996
EPA 300.0 Rev. 2.1	02/02/2022			02/04/2022 17:26	James L Waggeberby	2302995
	02/02/2022			02/04/2022 17:38	James L Waggeberby	2302996
	02/02/2022			02/11/2022 14:55	James L Waggeberby	2302995
EPA 350.1 Rev. 2.0	02/02/2022			02/09/2022 11:54	Roberta Tatti	2302997
	02/02/2022			02/09/2022 15:01	Roberta Tatti	2302998
EPA 351.2 Rev. 2.0	02/02/2022	02/03/2022 10:45	Samantha L Bates	02/07/2022 11:29	Alexandra J Mattheus	2302997
	02/02/2022	02/08/2022 13:21	Samantha L Bates	02/09/2022 10:10	Alexandra J Mattheus	2302998
EPA 353.2 Rev. 2.0	02/02/2022			02/03/2022 09:48	Beverly Y. Sanders	2302997
	02/02/2022			02/07/2022 11:36	Beverly Y. Sanders	2302998
EPA 365.1 Rev. 2.0	02/02/2022	02/03/2022 14:00	Simonne.V. Calhoun	02/08/2022 14:43	Shengyu Ding	2302997
	02/02/2022	02/08/2022 14:30	Simonne.V. Calhoun	02/09/2022 14:39	Shengyu Ding	2302998
EPA 365.1 Rev. 2.0 dissolved	02/02/2022			02/02/2022 14:26	James L Waggeberby	2302999
	02/02/2022			02/02/2022 14:27	James L Waggeberby	2303000
SM 2320 B-2011	02/02/2022			02/08/2022 03:00	Dale L. Simmons	2302996
	02/02/2022			02/08/2022 04:54	Dale L. Simmons	2302995
SM 2540 C-2011	02/02/2022			02/04/2022 14:55	Yijie Li	2302995, 2302996
SM 2540 D-2011	02/02/2022			02/04/2022 14:55	Yijie Li	2302995, 2302996
SM 4500 F-C-2011	02/02/2022			02/08/2022 03:00	Dale L. Simmons	2302996
	02/02/2022			02/08/2022 04:54	Dale L. Simmons	2302995
SM 5310 B-2011	02/02/2022			02/16/2022 17:48	Nathaniel J Jones	2302997
	02/02/2022			02/16/2022 18:34	Nathaniel J Jones	2302998