

Chemical Analysis Report

SO-DIST-2022-05-06-02

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

Event Description: **2022 SMP : Highland Lakes**

Request ID: **RQ-2022-05-02-55**

Customer: **SO-DIST**

Project ID: **SMP**

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FLDEP South District Office
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 31-MAY-2022 10:05

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Lake Carrie at Center

Collection Date/Time: 05/05/2022 10:35

Field ID: G4SD0212

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325248	DEP SOP: NU-094-1	Color (true)**	130		PCU	P413520	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P413525	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P413938	
		Sulfate	6.3		mg SO4/L	P413942	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P413855	
	SM 2540 C-2011	TDS	90		mg/L	P413946	
	SM 2540 D-2011	TSS	2	I	mg/L	P413948	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P413860	
2325250	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P413903	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P413921	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P413931	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P413693	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P413881	

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: Lake Francis

Collection Date/Time: 05/05/2022 11:15

Field ID: G4SD0187

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325244	DEP SOP: NU-094-1	Color (true)**	9.8		PCU	P413520	
	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P413525	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P413938	
		Sulfate	26	A	mg SO4/L	P413942	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P413855	
	SM 2540 C-2011	TDS	113		mg/L	P413946	
	SM 2540 D-2011	TSS	3	I	mg/L	P413948	
	SM 4500-F- C-2011	Fluoride	0.056	I	mg F/L	P413860	
2325246	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P413903	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P413921	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P413931	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P413693	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P413881	

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: Grassy Creek

Collection Date/Time: 05/05/2022 12:25

Field ID: G4SD0184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325249	DEP SOP: NU-094-1	Color (true)**	45		PCU	P413520	
	EPA 180.1 Rev. 2.0	Turbidity	0.70	I	NTU	P413525	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P413938	
		Sulfate	27		mg SO4/L	P413942	
	SM 2320 B-2011	Total Alkalinity	5.5		mg CaCO3/L	P413855	
	SM 2540 C-2011	TDS	100		mg/L	P413946	
	SM 2540 D-2011	TSS	3	IA	mg/L	P413949	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P413860	
2325251	EPA 350.1 Rev. 2.0	Ammonia-N	0.084		mg N/L	P413903	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P413922	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P413931	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P413693	
	SM 5310 B-2011	Organic Carbon	9.5		mg C/L	P413881	

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: Lake Apthorpe

Collection Date/Time: 05/05/2022 11:55

Field ID: G4SD0185

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325245	DEP SOP: NU-094-1	Color (true)**	20		PCU	P413520	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P413525	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P413938	
		Sulfate	34		mg SO4/L	P413942	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P413855	
	SM 2540 C-2011	TDS	114		mg/L	P413946	
	SM 2540 D-2011	TSS	2	I	mg/L	P413948	
	SM 4500-F- C-2011	Fluoride	0.051	I	mg F/L	P413860	
2325247	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P413903	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P413921	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.49		mg N/L	P413931	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P413693	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P413881	

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: P413520

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413525

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413938

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413942

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413903

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413921

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413922

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413931

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413693

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P413855

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P413946

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P413948

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P413949

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P413860

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P413881

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: P413520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413938

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413942

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413921

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413922

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413931

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413693

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P413855

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P413860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325244	Chloride	98.4		P	90 - 110
2325249	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325244	Sulfate	95.5		P	90 - 110
2325249	Sulfate	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325246	Ammonia-N	101	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325161	Kjeldahl Nitrogen	98.6	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325309	Kjeldahl Nitrogen	112	99.3	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325246	NO2NO3-N	96.0	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325267	Total-P	102	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P413860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325326	Fluoride	100	100	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325275	Organic Carbon	95.1	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P413520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325272	Color (true)	0.630	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325273	Turbidity	14.1	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325244	Chloride	0.357	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325244	Sulfate	0.185	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325246	Ammonia-N	3.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325161	Kjeldahl Nitrogen	5.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325309	Kjeldahl Nitrogen	8.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325246	NO2NO3-N	0.509	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325267	Total-P	0.186	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P413855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325326	Total Alkalinity	1.71	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P413946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325038	TDS	5.41	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P413860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325326	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P413881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325275	Organic Carbon	0.0888	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: A111974

Included Lab Sample IDs: 2325244, 2325245, 2325248, 2325249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111976

Included Lab Sample IDs: 2325244, 2325245, 2325248, 2325249

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

Reference Method: SM 2320 B-2011

Run ID: A112155

Included Lab Sample IDs: 2325244, 2325245, 2325248, 2325249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	95.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A112155

Included Lab Sample IDs: 2325244, 2325245, 2325248, 2325249

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112156

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

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

Reference Method: SM 5310 B-2011

Run ID: A112167

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.7	95.7	P/P	90 - 110
Organic Carbon	96.2	95.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112183

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112196

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112196

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A112198

Included Lab Sample IDs: 2325244, 2325245, 2325248, 2325249

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112278

Included Lab Sample IDs: 2325246, 2325247, 2325250, 2325251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	99.7	P/P	90 - 110
Kjeldahl Nitrogen	96.1	103	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)	99.8			0.630	
EPA 180.1 Rev. 2.0	Turbidity	95.5			14.1	
EPA 300.0 Rev. 2.1	Chloride	102	98.4	96.8	0.357	
	Sulfate	101	95.5	94.9	0.185	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	101	97.4		3.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	98.6	105		5.02
	Kjeldahl Nitrogen	103	112	99.3		8.34
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	96.0	95.6		0.509
EPA 365.1 Rev. 2.0	Total-P	101	102	102		0.186
SM 2320 B-2011	Total Alkalinity	99.6			1.71	
SM 2540 C-2011	TDS				5.41	
SM 4500-F- C-2011	Fluoride	100	100	100		0.0
SM 5310 B-2011	Organic Carbon	94.6	95.1	95.0		0.0888

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2325244, 2325245, 2325248, 2325249
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2325244, 2325245, 2325248, 2325249
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2325244, 2325245, 2325248, 2325249
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2325244, 2325245, 2325248, 2325249
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2325246, 2325247, 2325250, 2325251
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2325246, 2325247, 2325250, 2325251
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2325246, 2325247, 2325250, 2325251
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2325246, 2325247, 2325250, 2325251
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2325244, 2325245, 2325248, 2325249
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2325244, 2325245, 2325248, 2325249
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2325244, 2325245, 2325248, 2325249
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2325244, 2325245, 2325248, 2325249
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2325246, 2325247, 2325250, 2325251

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	05/06/2022			05/06/2022 15:58	Anna M. Plaviak	2325244, 2325245
	05/06/2022			05/06/2022 15:59	Anna M. Plaviak	2325248
	05/06/2022			05/06/2022 16:00	Anna M. Plaviak	2325249
EPA 180.1 Rev. 2.0	05/06/2022			05/06/2022 14:42	Khloe J Berg	2325244, 2325245
	05/06/2022			05/06/2022 14:44	Khloe J Berg	2325248
	05/06/2022			05/06/2022 14:45	Khloe J Berg	2325249
EPA 300.0 Rev. 2.1	05/06/2022			05/17/2022 01:36	Anna M. Plaviak	2325244
	05/06/2022			05/17/2022 02:00	Anna M. Plaviak	2325249
	05/06/2022			05/17/2022 03:37	Anna M. Plaviak	2325245
EPA 350.1 Rev. 2.0	05/06/2022			05/17/2022 03:49	Anna M. Plaviak	2325248
	05/06/2022			05/16/2022 14:29	Judith K. Clark	2325246
	05/06/2022			05/16/2022 14:33	Judith K. Clark	2325247
EPA 351.2 Rev. 2.0	05/06/2022			05/16/2022 14:35	Judith K. Clark	2325250
	05/06/2022			05/16/2022 14:36	Judith K. Clark	2325251
	05/06/2022	05/18/2022 16:22	Samantha L Bates	05/19/2022 14:58	Samantha L Bates	2325246
EPA 353.2 Rev. 2.0	05/06/2022	05/18/2022 16:22	Samantha L Bates	05/19/2022 15:00	Samantha L Bates	2325247
	05/06/2022	05/18/2022 16:22	Samantha L Bates	05/19/2022 15:01	Samantha L Bates	2325250
	05/06/2022	05/18/2022 16:22	Samantha L Bates	05/19/2022 15:18	Samantha L Bates	2325251
EPA 365.1 Rev. 2.0	05/06/2022			05/17/2022 10:44	Beverly Y. Sanders	2325247
	05/06/2022			05/17/2022 10:51	Beverly Y. Sanders	2325246
	05/06/2022			05/17/2022 10:52	Beverly Y. Sanders	2325250
SM 2320 B-2011	05/06/2022			05/17/2022 12:19	Beverly Y. Sanders	2325251
	05/06/2022	05/12/2022 16:34	Simonne.V. Calhoun	05/13/2022 16:51	James L Waggeberby	2325246
	05/06/2022	05/12/2022 16:34	Simonne.V. Calhoun	05/13/2022 16:52	James L Waggeberby	2325247
SM 2540 C-2011	05/06/2022	05/12/2022 16:34	Simonne.V. Calhoun	05/13/2022 16:53	James L Waggeberby	2325250
	05/06/2022	05/12/2022 16:34	Simonne.V. Calhoun	05/13/2022 16:54	James L Waggeberby	2325251
	05/06/2022			05/14/2022 17:05	Dale L. Simmons	2325244
SM 2540 D-2011	05/06/2022			05/14/2022 17:17	Dale L. Simmons	2325245
	05/06/2022			05/14/2022 17:29	Dale L. Simmons	2325248
	05/06/2022			05/14/2022 17:39	Dale L. Simmons	2325249
SM 4500-F- C-2011	05/06/2022			05/09/2022 15:28	Yijie Li	2325244, 2325245, 2325248, 2325249
	05/06/2022			05/09/2022 13:28	Yijie Li	2325244, 2325245, 2325248, 2325249
	05/06/2022			05/14/2022 17:05	Dale L. Simmons	2325244
SM 5310 B-2011	05/06/2022			05/14/2022 17:17	Dale L. Simmons	2325245
	05/06/2022			05/14/2022 17:29	Dale L. Simmons	2325248
	05/06/2022			05/14/2022 17:39	Dale L. Simmons	2325249
	05/06/2022			05/13/2022 20:32	Khloe J Berg	2325251
	05/06/2022			05/13/2022 23:29	Khloe J Berg	2325246
	05/06/2022			05/13/2022 23:44	Khloe J Berg	2325247
	05/06/2022			05/13/2022 23:58	Khloe J Berg	2325250