Chemical Analysis Report

SO-DIST-2022-02-16-01

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-2022-02-14-25**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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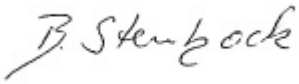
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 10-MAR-2022 15:36



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 Near Northeast Shore **Collection Date/Time: 02/15/2022 11:25**

Field ID: G4SD0212 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306107	DEP SOP: NU-094-1	Color (true)**	140		PCU	P409988	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P409937	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P410156	
		Sulfate	5.5		mg SO4/L	P410153	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P410035	RPD
	SM 2540 C-2011	TDS	99		mg/L	P410339	
	SM 2540 D-2011	TSS	3	I	mg/L	P410254	
	SM 4500 F-C-2011	Fluoride	0.039	I	mg F/L	P410038	
2306108	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P410318	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P409964	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P410292	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P409993	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P410585	
2306109	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P409931	

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: 02/15/2022 12:11**

Field ID: G4SD0187 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306101	DEP SOP: NU-094-1	Color (true)**	12	A	PCU	P409988	
	EPA 180.1 Rev. 2.0	Turbidity	5.0	A	NTU	P409937	
	EPA 300.0 Rev. 2.1	Chloride	20	A	mg Cl/L	P410156	
		Sulfate	25	A	mg SO4/L	P410153	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P410035	RPD
	SM 2540 C-2011	TDS	110		mg/L	P410339	
	SM 2540 D-2011	TSS	5	I	mg/L	P410254	
	SM 4500 F-C-2011	Fluoride	0.051	I	mg F/L	P410038	
2306103	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P410318	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P410043	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P410292	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P409993	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P410585	
2306105	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409931	

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: 02/15/2022 13:00**

Field ID: G4SD0185 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306102	DEP SOP: NU-094-1	Color (true)**	25	A	PCU	P409989	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P409937	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P410229	
		Sulfate	31		mg SO4/L	P410230	
	SM 2320 B-2011	Total Alkalinity	16	AJ	mg CaCO3/L	P410035	RPD
	SM 2540 C-2011	TDS	122	A	mg/L	P410339	
	SM 2540 D-2011	TSS	3	I A	mg/L	P410254	
	SM 4500 F-C-2011	Fluoride	0.049	I	mg F/L	P410038	
2306104	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P410318	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P410043	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P410292	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P409993	
	SM 5310 B-2011	Organic Carbon	7.6		mg C/L	P410585	
2306106	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P409931	

Ref. Method and Comment:
SM 2320 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.
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: P409988

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P409989

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409937

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410153

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410156

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410229

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410230

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410318

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409964

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410043

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410292

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409993

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409931

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

Reference Method: SM 2320 B-2011
Batch ID: P410035

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

Reference Method: SM 2540 C-2011
Batch ID: P410339

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P410254

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410038

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410585

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: P409988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: DEP SOP: NU-094-1
Batch ID: P409989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410153

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410156

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410230

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410318

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409964

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410043

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410292

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: P409993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409931

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

Reference Method: SM 2320 B-2011
Batch ID: P410035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.5		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P410038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P410585

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306101	Sulfate	104		P	90 - 110
2306277	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306101	Chloride	106		P	90 - 110
2306277	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305675	Chloride	95.6		P	90 - 110
2306572	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305675	Sulfate	97.8		P	90 - 110
2306572	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306103	Ammonia-N	97.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306030	Kjeldahl Nitrogen	106	112	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305751	Kjeldahl Nitrogen	108	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306103	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306137	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306138	O-Phosphate-P	97.6	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P410038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306102	Fluoride	96.5	97.0	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306033	Organic Carbon	95.7	98.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P409988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306101	Color (true)	4.61	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P409989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306102	Color (true)	0.792	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P409937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306101	Turbidity	4.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306101	Sulfate	0.296	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306101	Chloride	0.423	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305675	Chloride	1.29	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305675	Sulfate	2.70	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306103	Ammonia-N	0.377	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P409964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306030	Kjeldahl Nitrogen	4.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305751	Kjeldahl Nitrogen	4.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306103	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P409993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306137	Total-P	0.524	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P409931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306138	O-Phosphate-P	1.08	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P410035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306102	Total Alkalinity	6.63	Sample	F	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P410339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306102	TDS	7.35	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P410038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306102	Fluoride	0.492	Spike	P	0 - 2.1

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P410585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306033	Organic Carbon	2.06	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: A110423
Included Lab Sample IDs: 2306101, 2306107

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A110445
Included Lab Sample IDs: 2306105, 2306106, 2306109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	99.9	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A110446
Included Lab Sample IDs: 2306101, 2306102, 2306107

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

Reference Method: DEP SOP: NU-094-1
Run ID: A110466
Included Lab Sample IDs: 2306101, 2306102, 2306107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115
Color (true)	103	104	P/P	85 - 115

Reference Method: SM 2320 B-2011
Run ID: A110482
Included Lab Sample IDs: 2306101, 2306102, 2306107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.3	93.9	P/P	90 - 110
Total Alkalinity	96.4	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A110482
Included Lab Sample IDs: 2306101, 2306102, 2306107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	99.5	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110537
Included Lab Sample IDs: 2306108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	98.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110543
Included Lab Sample IDs: 2306102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.0	98.9	P/P	90 - 110
Sulfate	100	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A110545
Included Lab Sample IDs: 2306103, 2306104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110588
Included Lab Sample IDs: 2306103, 2306104, 2306108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.0	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A110602
Included Lab Sample IDs: 2306103, 2306104, 2306108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A110618
Included Lab Sample IDs: 2306103, 2306104, 2306108

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

Reference Method: SM 5310 B-2011
Run ID: A110715
Included Lab Sample IDs: 2306103, 2306104, 2306108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	98.1	P/P	90 - 110
Organic Carbon	98.1	101	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	102				4.61	
	Color (true)	102				0.792	
EPA 180.1 Rev. 2.0	Turbidity	97.6				4.23	
EPA 300.0 Rev. 2.1	Chloride	104	106	103		0.423	
	Chloride	98.1	95.6	99.0		1.29	
	Sulfate	102	104	102		0.296	
	Sulfate	99.4	97.8	98.7		2.70	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	97.6	98.0			0.377
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	106	112			4.05
	Kjeldahl Nitrogen	97.2	108	101			4.03
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100			0.499
EPA 365.1 Rev. 2.0	Total-P	109	106	107			0.524
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.6	99.6			1.08
SM 2320 B-2011	Total Alkalinity	96.5				6.63	
SM 2540 C-2011	TDS					7.35	
SM 4500 F-C-2011	Fluoride	98.3	96.5	97.0			0.492
SM 5310 B-2011	Organic Carbon	95.6	95.7	98.6			2.06

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2306101, 2306102, 2306107
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2306101, 2306102, 2306107
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2306101, 2306102, 2306107
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2306101, 2306102, 2306107
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2306103, 2306104, 2306108
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2306103, 2306104, 2306108
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2306103, 2306104, 2306108
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2306103, 2306104, 2306108
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2306105, 2306106, 2306109
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2306101, 2306102, 2306107
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2306101, 2306102, 2306107
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2306101, 2306102, 2306107
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2306101, 2306102, 2306107
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2306103, 2306104, 2306108

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	02/16/2022			02/16/2022 16:49	Anna M. Plaviak	2306101
	02/16/2022			02/16/2022 16:50	Anna M. Plaviak	2306107
	02/16/2022			02/16/2022 16:57	Anna M. Plaviak	2306102
EPA 180.1 Rev. 2.0	02/16/2022			02/16/2022 15:03	Khloe J Berg	2306101
	02/16/2022			02/16/2022 15:27	Khloe J Berg	2306102
	02/16/2022			02/16/2022 15:28	Khloe J Berg	2306107
EPA 300.0 Rev. 2.1	02/16/2022			02/18/2022 20:14	Roberta Tatti	2306101
	02/16/2022			02/18/2022 21:38	Roberta Tatti	2306107
	02/16/2022			02/22/2022 15:20	Roberta Tatti	2306102
EPA 350.1 Rev. 2.0	02/16/2022			02/24/2022 15:25	Ping Hua	2306103
	02/16/2022			02/24/2022 15:30	Ping Hua	2306104
	02/16/2022			02/24/2022 15:31	Ping Hua	2306108
EPA 351.2 Rev. 2.0	02/16/2022	02/18/2022 10:12	Samantha L Bates	02/22/2022 11:05	Alexandra J Mattheus	2306108
	02/16/2022	02/21/2022 14:33	Samantha L Bates	02/22/2022 15:40	Alexandra J Mattheus	2306103
	02/16/2022	02/21/2022 14:33	Samantha L Bates	02/22/2022 15:42	Alexandra J Mattheus	2306104
EPA 353.2 Rev. 2.0	02/16/2022			02/24/2022 10:22	Beverly Y. Sanders	2306103
	02/16/2022			02/24/2022 11:20	Beverly Y. Sanders	2306104
	02/16/2022			02/24/2022 11:21	Beverly Y. Sanders	2306108
EPA 365.1 Rev. 2.0	02/16/2022	02/18/2022 15:35	Simonne.V. Calhoun	02/23/2022 12:38	Sarah A Nixon	2306103
	02/16/2022	02/18/2022 15:35	Simonne.V. Calhoun	02/23/2022 12:39	Sarah A Nixon	2306104
	02/16/2022	02/18/2022 15:35	Simonne.V. Calhoun	02/23/2022 12:40	Sarah A Nixon	2306108
EPA 365.1 Rev. 2.0 dissolved	02/16/2022			02/16/2022 14:58	James L Waggerby	2306105
	02/16/2022			02/16/2022 15:03	James L Waggerby	2306106
	02/16/2022			02/16/2022 15:04	James L Waggerby	2306109
SM 2320 B-2011	02/16/2022			02/17/2022 21:44	Dale L. Simmons	2306102
	02/16/2022			02/17/2022 23:23	Dale L. Simmons	2306101
	02/16/2022			02/17/2022 23:35	Dale L. Simmons	2306107
SM 2540 C-2011	02/16/2022			02/18/2022 15:06	Yijie Li	2306101, 2306102, 2306107
SM 2540 D-2011	02/16/2022			02/18/2022 15:06	Yijie Li	2306101, 2306102, 2306107
SM 4500 F-C-2011	02/16/2022			02/17/2022 21:34	Dale L. Simmons	2306102
	02/16/2022			02/17/2022 23:23	Dale L. Simmons	2306101
	02/16/2022			02/17/2022 23:35	Dale L. Simmons	2306107
SM 5310 B-2011	02/16/2022			03/01/2022 23:14	Nathaniel J Jones	2306108
	02/16/2022			03/02/2022 00:07	Nathaniel J Jones	2306103
	02/16/2022			03/02/2022 01:17	Nathaniel J Jones	2306104