

Chemical Analysis Report

NE-DIST-2019-03-27-02

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

Event Description: **Interlachen 2**
Request ID: **RQ-2019-03-25-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 11-APR-2019 16:33

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: GILLIS POND CENTER

Collection Date/Time: 03/26/2019 11:20

Field ID: G1NE0863

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073030	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P361146	
	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P361502	
		Sulfate	2.5		mg SO4/L	P361505	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361652	
	SM 2540 C-97	TDS	48		mg/L	P361742	
	SM 2540 D-97	TSS	2	U	mg/L	P361788	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361656	
2073033	EPA 350.1 Rev. 2.0	Ammonia-N	1.3		mg N/L	P361460	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P361373	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P361294	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P361364	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P361236	
2073036	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361165	

Ref. Method and Comment:

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

Sample Location: LAKE FANNY CENTER

Collection Date/Time: 03/26/2019 11:50

Field ID: 20020100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073031	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P361146	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P361502	
		Sulfate	6.0		mg SO4/L	P361505	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361652	
	SM 2540 C-97	TDS	40		mg/L	P361742	
	SM 2540 D-97	TSS	2	I	mg/L	P361788	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361656	
2073034	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P361460	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P361373	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P361294	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P361364	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P361357	
2073037	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361165	

Ref. Method and Comment:

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

Sample Location: HARDESTY LAKE CENTER

Collection Date/Time: 03/26/2019 10:30

Field ID: G1NE0869

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2073032	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P361146	
	EPA 300.0 Rev. 2.1	Chloride	7.1		mg Cl/L	P361502	
		Sulfate	1.2		mg SO4/L	P361505	
	SM 2320 B-97	Total Alkalinity	1.7	I	mg CaCO3/L	P361653	
	SM 2540 C-97	TDS	57		mg/L	P361742	
	SM 2540 D-97	TSS	4	I	mg/L	P361788	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361657	
2073035	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P361460	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P361373	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P361294	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P361364	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P361357	
2073038	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P361165	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361146

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361502

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361505

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361460

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361373

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361294

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361364

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361165

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

Reference Method: SM 2320 B-97
Batch ID: P361652

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P361653

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

Reference Method: SM 2540 C-97
Batch ID: P361742

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361788

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361656

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P361657

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361236

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

Reference Method: SM 5310 B-00
Batch ID: P361357

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P361502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P361505

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361460

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P361373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P361294

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P361364

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P361165

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

Reference Method: SM 2320 B-97
 Batch ID: P361652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	98 - 107

Reference Method: SM 2320 B-97
 Batch ID: P361653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	98 - 107

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P361656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072894	Chloride	97.5		P	90 - 110
2073030	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072894	Sulfate	97.9		P	90 - 110
2073030	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072981	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072914	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073178	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072919	O-Phosphate-P	91.3	93.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P361656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072895	Fluoride	98.0	98.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073355	Fluoride	98.0	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072812	Organic Carbon	97.2	97.4	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073201	Organic Carbon	98.3	98.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072978	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072894	Chloride	0.311	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072894	Sulfate	0.690	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072981	Ammonia-N	0.306	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072982	Kjeldahl Nitrogen	8.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072914	NO2NO3-N	0.215	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073178	Total-P	1.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072919	O-Phosphate-P	1.51	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P361652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072895	Total Alkalinity	0.172	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P361653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073355	Total Alkalinity	0.904	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072791	TDS	4.01	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P361788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073200	TSS	7.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P361656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072895	Fluoride	0.522	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P361657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073355	Fluoride	0.948	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P361236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072812	Organic Carbon	0.133	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P361357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073201	Organic Carbon	0.0404	Spike	P	0 - 20

Quality Assurance Report

Precision

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90277

Included Lab Sample IDs: 2073030, 2073031, 2073032

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90279

Included Lab Sample IDs: 2073036, 2073037, 2073038

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	95.4	P/P	90 - 110
O-Phosphate-P	99.1	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90314

Included Lab Sample IDs: 2073033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90326

Included Lab Sample IDs: 2073033, 2073034, 2073035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90345

Included Lab Sample IDs: 2073034, 2073035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90386

Included Lab Sample IDs: 2073035

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: A90390

Included Lab Sample IDs: 2073033, 2073034, 2073035

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90396

Included Lab Sample IDs: 2073033, 2073034, 2073035

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90396

Included Lab Sample IDs: 2073033, 2073034, 2073035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90397

Included Lab Sample IDs: 2073033, 2073034

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90412

Included Lab Sample IDs: 2073030, 2073031, 2073032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	102	101	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90475

Included Lab Sample IDs: 2073030, 2073031, 2073032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90475

Included Lab Sample IDs: 2073030, 2073031, 2073032

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.19	
EPA 300.0 Rev. 2.1	Chloride	99.9	97.5	99.2		0.311	
	Sulfate	102	97.9	101		0.690	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	102			0.306
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3					8.53
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.0	99.5				0.215
EPA 365.1 Rev. 2.0	Total-P	103	103	101			1.19
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4	91.3	93.0			1.51
SM 2320 B-97	Total Alkalinity	99.2				0.172	
	Total Alkalinity	99.6				0.904	
SM 2540 C-97	TDS					4.01	
SM 2540 D-97	TSS					7.14	
SM 4500 F-C-97	Fluoride	98.3	98.0	98.5			0.522
	Fluoride	98.3	98.0	99.1			0.948
SM 5310 B-00	Organic Carbon	99.4	97.2	97.4			0.133
	Organic Carbon	99.2	98.3	98.3			0.0404

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2073030, 2073031, 2073032
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2073030, 2073031, 2073032
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2073030, 2073031, 2073032
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2073033, 2073034, 2073035
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2073033, 2073034, 2073035
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2073033, 2073034, 2073035
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2073033, 2073034, 2073035
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2073036, 2073037, 2073038
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2073030, 2073031, 2073032
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2073030, 2073031, 2073032
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2073030, 2073031, 2073032
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2073030, 2073031, 2073032
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2073033, 2073034, 2073035

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/27/2019			03/27/2019 15:19	Adrian Shelby	2073030, 2073031, 2073032
EPA 300.0 Rev. 2.1	03/27/2019			04/02/2019 22:31	Lipi Saha	2073030
	03/27/2019			04/03/2019 01:08	Lipi Saha	2073031
	03/27/2019			04/03/2019 01:20	Lipi Saha	2073032
EPA 350.1 Rev. 2.0	03/27/2019			04/02/2019 11:48	Ping Hua	2073035
	03/27/2019			04/02/2019 12:53	Ping Hua	2073033
	03/27/2019			04/02/2019 12:54	Ping Hua	2073034
EPA 351.2 Rev. 2.0	03/27/2019	04/01/2019 13:00	Adrian Shelby	04/02/2019 14:46	Joseph Suarez	2073033
	03/27/2019	04/01/2019 13:00	Adrian Shelby	04/02/2019 14:47	Joseph Suarez	2073034
	03/27/2019	04/01/2019 13:00	Adrian Shelby	04/02/2019 14:49	Joseph Suarez	2073035
EPA 353.2 Rev. 2.0	03/27/2019			03/29/2019 12:14	Virginia P. Brown	2073033
	03/27/2019			03/29/2019 12:15	Virginia P. Brown	2073034
	03/27/2019			03/29/2019 12:16	Virginia P. Brown	2073035
EPA 365.1 Rev. 2.0	03/27/2019	04/01/2019 14:50	Sima Feizi	04/02/2019 12:33	Rosalyn Ballman	2073035
	03/27/2019	04/01/2019 14:50	Sima Feizi	04/02/2019 18:20	Rosalyn Ballman	2073033
	03/27/2019	04/01/2019 14:50	Sima Feizi	04/02/2019 18:21	Rosalyn Ballman	2073034
EPA 365.1 Rev. 2.0 dissolved	03/27/2019			03/27/2019 18:37	Jhamieka S. Greenwood	2073036
	03/27/2019			03/27/2019 18:42	Jhamieka S. Greenwood	2073037, 2073038
SM 2320 B-97	03/27/2019			04/04/2019 18:11	Dale L. Simmons	2073030
	03/27/2019			04/04/2019 18:20	Dale L. Simmons	2073031
	03/27/2019			04/04/2019 19:28	Dale L. Simmons	2073032
SM 2540 C-97	03/27/2019			03/29/2019 15:26	Yijie Li	2073030, 2073031, 2073032
SM 2540 D-97	03/27/2019			03/29/2019 15:26	Yijie Li	2073030, 2073031, 2073032
SM 4500 F-C-97	03/27/2019			04/04/2019 18:11	Dale L. Simmons	2073030
	03/27/2019			04/04/2019 18:20	Dale L. Simmons	2073031
	03/27/2019			04/04/2019 19:28	Dale L. Simmons	2073032
SM 5310 B-00	03/27/2019			03/28/2019 20:48	Julia Storbeck	2073033
	03/27/2019			03/29/2019 16:18	Julia Storbeck	2073034
	03/27/2019			03/29/2019 16:30	Julia Storbeck	2073035