



Technical Memorandum

Date: June 1, 2023
LEX Project No. 01230144
From: Eric Hoffbauer
To: Nathan Siniowski
Company: City of Guelph – Water Services
29 Waterworks Place
Guelph, ON
N1E 6P7

Re: Asbestos in Water Testing

LEX Scientific was provided with one water sample for analysis of asbestos fibres in water by City of Guelph Water Services department.

1 Regulatory Background

Asbestos fibres in water do not have a regulatory limit in Canada. Neither Health Canada, nor the Ontario Drinking Water Quality Standards provide a guideline or limit for asbestos fibres in drinking water. Health Canada states that there is no consistent evidence confirming harmful effects of asbestos fibres in drinking water.

For comparison purposes, the US EPA has decided on a maximum acceptable concentration of 7 million fibres per litre of water.

2 Results

Table 1 Summary of Water Testing Results

Parameter	Raw Water Asbestos
Total Asbestos Fibre Count	0
Total Fibre Concentration	<0.18 MFL

Note: MFL – Million Fibres per Litre

Asbestos fibres were not detected in any of the samples submitted.

Laboratory Certificates of Analysis are attached.

Attachment: Laboratory Certificates of Analysis



Contact: German Leal
Company: LEX Scientific Inc.
Address: 291 Woodlawn Rd., West, Unit B-12
Guelph, ON N1H 7L6

Project / Location: JOB#: 9231625

PO Number: GO1744

ALS Work Order: 23051121

NARRATIVE: Analysis performed on FEI Tecnai TEM equipped with EDAX Octane T Plus Silicon Drift Detector and Z2 Analyzer. Fiber morphology, selected area electron diffraction (SAED), and energy dispersive x-ray analysis (EDXA) used to determine species. All sample collection is performed outside of ALS Cincinnati is therefore the sole responsibility of the client. Contact your local authority for information on method selection, sampling instructions, and reporting requirements prior to submission.

NOTICE: All US EPA Public Water System (PWS) drinking water compliance samples must be filtered by the laboratory within 48 hours of sampling. ALS cannot report analytical results directly to the EPA unless all of the information required by the state EPA agency is provided via the COC at the time of receipt. Report revisions resulting from failure to provide this information via the COC will result in additional administrative fees. ALS is not responsible for late or inaccurate EPA reporting as a result of client sample collection errors or sample information omissions. Water samples originating from outside the United States do not fall under the US EPA drinking water guidelines and are therefore not required to meet the 48 hour hold and are not reported to any agency.

METHOD CODES: "EPA 100.2" refers only to drinking (potable) PWS samples for EPA compliance which are required to be filtered within 48 hours of sampling and are analyzed at >10,000x for asbestos fibers >10µm long. "ENV 005" refers to a modified version of EPA 100.2 developed for all other non-potable, non-compliance, and non-US waters which are also analyzed at >10,000x for asbestos fibers >10µm long but are not required to meet the 48 hour hold time. "EPA 100.1" refers to waters analyzed by a modified version of the method for asbestos fibers of any size. All excess water is disposed immediately following adequate filtration. All filtered samples are disposed after 60 day archive. All TEM grids analyzed are archived for a minimum of 3 years. Results apply only to portions of samples analyzed.

SUMMARY: An AS of <0.2 MFL is desired for drinking (potable) waters, and an AS of <7 MFL is generally acceptable for non-potable waters. Whenever possible, a sufficient volume is analyzed to yield the desired AS based on the detection of 1 confirmed asbestos fiber in the total area analyzed. However, waters containing excessive solids may require filtration of volumes too low to achieve the desired AS. In any case, a minimum of 4 and maximum of 10 grid openings are analyzed regardless of the AS reached or the asbestos concentration detected. Representative EDXA spectra and/or photomicrographs are available upon request for an additional fee. NA=Not Applicable, AS=Analytical Sensitivity, MFL=Millions of Fibers per Liter, MRL=Method Reporting Limit

ALS Cincinnati accredited by NY ELAP for Asbestos in Water by EPA 100.2

OH State Lab No.: 4077, OH Analyst Nos.: 2268 (P. Hizar), 3431 (A. Sohn)

PA State Lab No.: 68-01320, PA Certification No.: 003

WA State Lab No.: 211

NY State Lab No.: 11371

Pamela M. Hizar

Pamela M. Hizar

ALS Asbestos Technical Lead & Microscopy Department Manager

IDENTIFICATION

Raw Water
Client ID: Asbestos
ALS ID: 23051121-01A
Method: ENV 005
MRL: <7MFL
Collection: 5/23/23 12:00 AM
Filtration: 5/25/23 10:30 AM
Elapsed: NA
NO SAMPLING
TIME PROVIDED
Sample Comments: VIA COC

ANALYSIS

Analyst: Pamela Hizar
Completed: 5/25/23 2:45 PM
Volume (L): 0.15
Avg. Opening Area (mm²): 0.0102
No. Openings Analyzed: 4
AS (MFL): 0.18

COUNT

Chrysotile: 0
Amosite: 0
Crocidolite: 0
Actinolite: 0
Tremolite: 0
Anthophyllite: 0
Total Asbestos: 0

CONCENTRATION (MFL)

Chrysotile: <AS
Amosite: <AS
Crocidolite: <AS
Actinolite: <AS
Tremolite: <AS
Anthophyllite: <AS
Total Asbestos: <AS
Analysis Comments: NONE