

Petition Assessing Effectiveness of Regulation of Asbestos and Asbestos Cement Pipes in Canada

Submission to: Office of the Auditor General of Canada

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Petitioners: Canadian Environmental Law Association and Prevent Cancer Now

Submission date: October 7, 2022 (updated November 22, 2022)

Introduction

The Canadian Environmental Law Association (CELA) is a non-profit legal aid clinic based in Ontario. Since 1970, CELA has provided legal representation to individuals and groups with problems caused by environmental pollution and by working to change policies and laws to prevent such problems in the future. This includes a specific focus on protecting vulnerable populations such as children, the elderly, people of low income, and workers, who are exposed to toxic substances.

Prevent Cancer Now (PCN) is a non-profit citizens' group, including experts in sciences, medicine and environmental health. PCN focuses on primary cancer prevention, to "stop cancer before it starts," by promoting healthy options, and working to change practices, policies and laws to make "least-toxic" the norm.

1. Purpose

This petition seeks a response from Environment and Climate Change Canada, Health Canada, and other federal departments that address asbestos waste. The purpose of this petition is to examine whether harm to Canadian health is effectively prevented under the current regulation of asbestos and pipes containing asbestos.

2. Background

Asbestos is a general term for a variety of silicate minerals that can be separated into soft, silky fibres.¹ It has historically been used for many construction applications and is found primarily in roofing, thermal and electrical insulation, cement pipe and sheets, flooring, gaskets, coatings, and other products.² Asbestos exposure has been linked to asbestosis, a number of cancers including lung cancer, pleural and peritoneal mesothelioma, cancer of the larynx and ovary.³

¹ "Asbestos in Water and Asbestos Cement Water Pipes" (18 January 2017), online: *Safe Drinking Water Foundation* <<https://www.safewater.org/fact-sheets-1/2017/1/18/asbestos-in-water-and-asbestos-cement-water-pipes>>.

² "Asbestos: Burden of Occupational Cancer Fact Sheet" (January 2020) at 1, online (pdf): *Occupational Cancer Research Centre* <http://www.occupationalcancer.ca/wp-content/uploads/2020/01/Asbestos_Burden_FS_2019.pdf>.

³ "Asbestos in Water and Asbestos Cement Water Pipes" (18 January 2017), online: *Safe Drinking Water Foundation* <<https://www.safewater.org/fact-sheets-1/2017/1/18/asbestos-in-water-and-asbestos-cement-water-pipes>>.

Evidence suggests it may also be linked to other cancers, such as colorectal, pharynx, and stomach cancers.⁴ In 2019, the Burden of Occupational Cancer Study found that approximately 1,900 lung cancers and 430 mesotheliomas were due to occupational asbestos exposure each year, based on past exposures (1961-2001).⁵ This is eight percent of all lung cancers and 81 percent of all mesotheliomas diagnosed annually. Further, the majority of remaining mesotheliomas are likely due to environmental asbestos exposure.⁶

Asbestos cement (AC) became popular as a water pipe material in the 1940s. AC pipes are made of approximately 80 percent cement and 20 percent asbestos.⁷ An estimated 18 percent of water distribution pipes in Canada and the United States are constructed of AC.⁸ In 2018, the manufacture, import, sale and use of asbestos-containing products, including AC pipes, was prohibited, but many remain in use in various drinking water distribution systems across Canada.⁹ The regulations do not address the issue of exposure to asbestos in existing materials, such as during the demolition, repair, or remediation of older buildings. The possibility of exposure to workers and the public will continue to exist as long as asbestos is still present in older products, buildings and infrastructure.

CELA and PCN are submitting questions to the following departments: Environment and Climate Change (ECCC); Health Canada (HC); Innovation, Science and Industry; Infrastructure Canada; Public Services and Procurement Canada (PSPC); and Transport Canada (TC).

3. Prohibition of Asbestos and Products Containing Asbestos - Assessing Effectiveness of Regulation

In this section, we submit questions 1-9 to the following departments: Environment and Climate Change (ECCC); Health Canada (HC); Infrastructure Canada; Innovation, Science and Industry; and Public Services and Procurement Canada (PSPC).

We request a response from ECCC and HC for Questions 1-3.

Question 1: Have the departments conducted a review of current management tools under the Prohibition of Asbestos and Products Containing Asbestos regulation to evaluate how effectively harm from asbestos is being prevented in Canada? Please provide the details of this review.

Question 2: The regulation contains a number of exemptions for asbestos use. The exemption for service equipment in nuclear facilities is being phased out in 2022 and the exemption for chlor-alkali facilities in 2029.¹⁰ What progress has been made to work towards these phase out dates? What support is being provided to industries transitioning

⁴ "Asbestos in Water and Asbestos Cement Water Pipes" (18 January 2017), online: *Safe Drinking Water Foundation* <<https://www.safewater.org/fact-sheets-1/2017/1/18/asbestos-in-water-and-asbestos-cement-water-pipes>>.

⁵ "Asbestos: Burden of Occupational Cancer Fact Sheet" (January 2020) at 1, online (pdf): *Occupational Cancer Research Centre* <http://www.occupationalcancer.ca/wp-content/uploads/2020/01/Asbestos_Burden_FS_2019.pdf>.

⁶ "Asbestos: Burden of Occupational Cancer Fact Sheet" (January 2020) at 1, online (pdf): *Occupational Cancer Research Centre* <http://www.occupationalcancer.ca/wp-content/uploads/2020/01/Asbestos_Burden_FS_2019.pdf>.

⁷ Julian Branch, "Poison Pipes" (11 August 2020), online: *Watershed Sentinel* <<https://watershedsentinel.ca/articles/poison-pipes/>>.

⁸ Y Hu, D L Wang, K Cossitt, "Asbestos Cement Water Mains: History, Current State, and Future Planning" (23 September 2008) at 1, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=3b76bd1e-8f6c-49cc-a77d-8298f2481d6d>>.

⁹ *Prohibition of Asbestos and Products Containing Asbestos Regulations*, SOR/2018-196.

¹⁰ "Prohibition of Asbestos and Products Containing Asbestos Regulations: Frequently Asked Questions" (19 November 2020), online: *Government of Canada* <<https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/prohibition-asbestos-products-regulations-questions.html>>.

to non-asbestos or non-toxic technology? What types of replacement technologies are being instituted, and what risks are associated with them?

Question 3: Does the Government of Canada plan to phase out the remaining exclusions (such as for disposal of consumer products with trace amounts, museum displays and laboratory research settings)? How does the government monitor and report the ongoing use of asbestos as exemption? Have reviews been conducted on how to phase out the use of asbestos for exclusions?

We request a response from HC and Infrastructure Canada to Question 4.

Question 4: When announcing the measures to ban asbestos and asbestos-containing products, the government stated, “There are no significant health risks if asbestos fibres are enclosed or tightly bound, in good condition, and left undisturbed.”¹¹ Ongoing, long-term water flow erodes and weakens old asbestos cement pipes. CELA and PCN ask for the details for ongoing monitoring of pipes and of drinking water quality undertaken across Canada, to assess whether asbestos is “enclosed or tightly bound, in good condition, and left undisturbed” and is not entering drinking water supplies? What is the incidence of failure of these pipes in across jurisdictions? Does failure result in increased water contamination, and/or residues in water mains, and how is this detected and remediated? What measures are taken to protect workers’, bystanders’ and environmental health when replacing intact or collapsed AC pipes, and how is asbestos containment verified?

We request a response from PSPC for Question 5.

Question 5: In response to CELA-CAUT’s Environmental Petition No. 387 in 2016, Public Services and Procurement Canada responded that the department was creating a “National Asbestos Inventory for federally owned office buildings in its portfolio” that contain asbestos. The inventory has been updated as of June 2022. What measures have been taken to reduce or eliminate exposure by removing the asbestos-containing materials identified in the buildings listed in this inventory?

We request a response from ECCC and HC for Questions 6-7.

Question 6: What steps remain to track and address remaining raw asbestos stockpiles, asbestos mining waste, and products containing asbestos (e.g. brake pads, construction materials) in Canada?

Question 7: The regulation outlines requirements to develop and maintain Asbestos Management Plans but does not provide for public review or reporting.¹² The risk posed to human health by asbestos exposure should require substantial public transparency with these plans. How is public transparency being fostered in the management of asbestos?

We request a response from ECCC and Innovation, Science and Industry for Question 8.

Question 8: What is being done to create a harmonized national asbestos strategy?

¹¹ The Government of Canada takes measures to ban asbestos and asbestos-containing products. News Release. October 2018. Online: <<https://www.canada.ca/en/environment-climate-change/news/2018/10/the-government-of-canada-takes-measures-to-ban-asbestos-and-asbestos-containing-products.html>>.

¹² *Prohibition of Asbestos and Products Containing Asbestos Regulations*, SOR/2018-196, s 15.

We request a response from ECCC and HC for Question 9.

Question 9: In CELA-CAUT Environmental Petition No. 387, the following question was asked: Has the government applied the precautionary principle in developing regulatory and non-regulatory measures on asbestos? Please provide a detailed response on how the two departments applied the precautionary principle in this strategy to address asbestos. If the precautionary principle was not applied, provide an explanation of why not.

4. Asbestos in Drinking Water

The issue of asbestos in water first came to light in the early 1970s, when the United States Environmental Protection Agency (EPA) launched legal action against the Reserve Mining Company.¹³ Dr. Irving Selikoff testified at the trial that the ingestion of asbestos was every bit as deadly as the inhalation of the fibre.¹⁴ After the trial, it was generally accepted that the issue of asbestos in water required more study.¹⁵ Evidence on the dangers of inhaling asbestos fibres was indisputable, but there continued to be uncertainty on the risks of ingesting asbestos from drinking water. Asbestos-related cancers in the gastrointestinal (GI) tract have been ascribed to inhaled asbestos that was then swallowed.

As a result, the EPA launched a series of studies into asbestos in water, the potential danger of ingested asbestos, and the potential risks of AC pipes. The EPA found that AC pipes are the main cause of asbestos in water and the potential risks of ingesting water containing asbestos are lung disease and cancer.¹⁶ In 1992, Congress passed legislation to regulate asbestos in water, setting a maximum contaminant level of 7 million fibres/L of water (or MFL).¹⁷

A 1977 study by the Department of National Health and Welfare surveyed the water supplies of 55 percent of the Canadian population and found that five percent of the population receives water with asbestos concentrations higher than 10 million fibres/L and that 0.6 percent receives water containing more than 100 million fibres/L.¹⁸ The study also showed that the federal government was aware that “erosion of asbestos-cement pipes is taking place” in Winnipeg.¹⁹

The National Research Council Canada (NRC) has conducted numerous studies into AC pipes. A 2010 study notes that these pipes were laid down before potential environmental, social, and health impacts were recognized or evaluated.²⁰ While intact AC pipes are unlikely to release large quantities of asbestos into drinking water during normal use, severe deterioration or sudden changes in hydraulic conditions may cause the release of asbestos into drinking water.²¹ In recent

¹³ Julian Branch, “Poison Pipes” (11 August 2020), online: *Watershed Sentinel* <<https://watershedsentinel.ca/articles/poison-pipes/>>.

¹⁴ Julian Branch, “Poison Pipes” (11 August 2020), online: *Watershed Sentinel* <<https://watershedsentinel.ca/articles/poison-pipes/>>.

¹⁵ Julian Branch, “Poison Pipes” (11 August 2020), online: *Watershed Sentinel* <<https://watershedsentinel.ca/articles/poison-pipes/>>.

¹⁶ “National Primary Drinking Water Regulations: Asbestos” (October 1995) at 1, online (pdf): *United States Environmental Protection Agency* <[¹⁷ Julian Branch, “Poison Pipes” \(11 August 2020\), online: *Watershed Sentinel* <<https://watershedsentinel.ca/articles/poison-pipes/>>.](https://nepis.epa.gov/Exe/ZyNET.exe/9100PO1W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1995+Thru+1999&Docs=&Query=&Time=&EndTime=&SearchMethod=1&ToCRestrict=n&ToC=&ToCEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C95thru99%5CTxt%5C00000029%5C9100PO1W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>.</p></div><div data-bbox=)

¹⁸ P Toft, P Wigle, JC Meranger, and Y Mao, “Asbestos and Drinking Water in Canada” (1981) 18 *Science of The Total Environment* 77 at 77, 80.

¹⁹ P Toft, P Wigle, JC Meranger, and Y Mao, “Asbestos and Drinking Water in Canada” (1981) 18 *Science of The Total Environment* 77 at 83.

²⁰ D L Wang, D R Cullimore, “Bacteriological Challenges to Asbestos Cement Water Distribution Pipelines” (August 2010) at 2, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/accepted/?id=490173b5-8ba7-4559-8a1e-7e08403e1c9d>>.

²¹ D L Wang, Y Hu, and R Chowdry, “Safety and Waste Management of Asbestos Cement Pipes” (28 August 2010) at 1, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

years, problems associated with AC pipes have increased, such as breaks and failure, which is partially attributable to the age of the pipes.²² AC pipes deteriorate and their breakage frequency increases with age. The life of the pipe can be 50-70 years, depending on soil type, climate, and the “aggressiveness” (e.g., mineral content, pH) of the water.²³ The NRC warned that severely deteriorated AC pipes release asbestos fibres into the drinking water, which could “pose a hazard of malignant tumours of the gastrointestinal tract and other organs in consumers.”²⁴ The NRC also pointed to the potential danger of using showers and humidifiers in homes where asbestos may be in the water.²⁵

Health Canada has taken the position that there is “no consistent, convincing evidence that asbestos ingested through water is harmful” to health.²⁶ Therefore, the Guidelines for Canadian Drinking Water Quality do not provide an established maximum acceptable concentration (MAC) for asbestos fibres.

The precautionary principle states that: “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”²⁷ This is particularly true when the evidence in human epidemiology is subject to conflicts of interest, delayed (often over generations), and difficult to acquire and replicate.²⁸ In the absence of high quality evidence that AC pipes do *not* pose a risk to drinking water, the precautionary principle requires an assumption that they are unsafe—to do otherwise is to place the health of Canadians at risk. The World Health Organization’s 2004 report on the precautionary principle specifically cited harm from asbestos as an “irreparable mistake” caused by waiting far too long for definitive evidence to take action.²⁹

In this section, we submit questions to HC and Infrastructure Canada.

We request a response from HC for Questions 10-12.

Question 10: Is the Government of Canada supporting or conducting studies on water as a source of exposure to asbestos? If so, please provide details. If not, why not?

Question 11: How can Health Canada maintain there is not “convincing, consistent” evidence that ingested asbestos is hazardous given several NRC reports referring to asbestos fibres in water as a “health concern” and one suggesting that severely deteriorated AC water pipes could cause cancer? This is an unreasonable, unethical standard given the type of data collection such as exposure estimation in the distant past, in the face of lack of infrastructure information in Canada, that would be necessary to study these cancers,

²² D L Wang, D R Cullimore, “Bacteriological Challenges to Asbestos Cement Water Distribution Pipelines” (August 2010) at 1, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/accepted/?id=490173b5-8ba7-4559-8a1e-7e08403e1c9d>>.

²³ “Asbestos in Water and Asbestos Cement Water Pipes” (18 January 2017), online: *Safe Drinking Water Foundation* <<https://www.safewater.org/fact-sheets-1/2017/1/18/asbestos-in-water-and-asbestos-cement-water-pipes>>.

²⁴ D L Wang, D R Cullimore, “Bacteriological Challenges to Asbestos Cement Water Distribution Pipelines” (August 2010) at 2, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/accepted/?id=490173b5-8ba7-4559-8a1e-7e08403e1c9d>>.

²⁵ D L Wang, Y Hu, and R Chowdry, “Safety and Waste Management of Asbestos Cement Pipes” (28 September 2010) at 1, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/accepted/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

²⁶ “Asbestos” (15 November 2021), online: *Government of Canada* <<https://www.canada.ca/en/health-canada/services/air-quality/indoor-air-contaminants/health-risks-asbestos.html>>.

²⁷ *Canadian Environmental Protection Act, 1999*, SC 1999, c 33, preamble.

²⁸ Soskolne et al. Conflict-of-Interest and Disclosure in Epidemiology. International Network for Epidemiology and Policy Position Statement. <https://epidemiologyinpolicy.org/col-d-position-statement/>

²⁹ Marcoo Martuzzi and Joel A Tickner, “The precautionary principle: protecting public health, the environment and the future of our children” (2004) at 4, online (pdf): *World Health Organization* <https://www.euro.who.int/_data/assets/pdf_file/0003/91173/E83079.pdf>.

with long latency. Provide evidence and the origin to substantiate Health Canada's position. Explain the research that would be necessary to meet the evidentiary bar to demonstrate harm associated with ingested asbestos. Delaying action on the basis of underpowered or inherently imprecise epidemiology is a well recognized misuse of epidemiological methods.³⁰

Question 12: Given Health Canada's stance that the evidence on the threats posed by asbestos in drinking water is inconsistent, how is the absence of a MAC for asbestos in drinking water reconciled with the precautionary principle?³¹ Will Canada establish a MAC for asbestos? If so, please provide details on this process, when it will be initiated, and the seeking of public input. If not, provide the rationale for not establishing a MAC.

We request a response from Infrastructure Canada for Questions 13-14.

Question 13: According to the NRC and Energy, Mines and Resources Canada, many more AC water pipes were installed in Western Canada, as opposed to Central Canada and Eastern Canada.³² Please provide the status of AC pipes in use across the country. Why were AC pipes used more frequently in Western Canada compared to other regions in Canada?

Question 14: Canada announced that it is conducting a National Infrastructure Assessment to create a credible source of data and evidence on Canada's key infrastructure needs.³³ The last federal review of AC pipes was conducted in 1977, 45 years ago.³⁴ Will the National Infrastructure Assessment gather updated data on the amount, condition, and location of AC pipes? If so, please provide details. If not, why not?

5. Disposal of AC Pipes

The repair, rehabilitation, and replacement of AC pipes pose a heightened health concern because they involve pipe cutting, polishing, demolition, transportation, and disposal.³⁵ These practices can release asbestos fibres into the air, especially if pipes are mishandled or damaged. Leaving these pipes in use may lead to asbestos fibres being released into water bodies or drinking water. However, there are no standard procedures to follow, so practices can vary significantly from one water utility to another.³⁶ A NRC study found that replaced AC water mains are either abandoned in place or collected and disposed of in designated sites.³⁷ Asbestos disposal sites must

³⁰ Soskolne CL, Kramer S, Ramos-Bonilla JP, Mandrioli D, Sass J, Gochfeld M, et al. Toolkit for detecting misused epidemiological methods. Environmental Health [Internet]. 2021 Aug 19 [cited 2021 Dec 22]; 20(1):90. Available from: <https://doi.org/10.1186/s12940-021-00771-6>

³¹ "Asbestos" (15 November 2021), online: *Government of Canada* <<https://www.canada.ca/en/health-canada/services/air-quality/indoor-air-contaminants/health-risks-asbestos.html>>.

³² ³² D L Wang, R Cullimore, Y Hu, and R Chowdry, "Biodeterioration of Asbestos Cement (AC) Pipe in Drinking Water Distribution Systems" (01 September 2011) at 1, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/accepted/?id=084f0596-f366-44d0-b75f-028fc56a71a0>>; B Nebesar and GW Riley, "Asbestos/Cement Pipe Corrosion" (October 1983) at 13, online (pdf): *Government of Canada* <https://publications.gc.ca/collections/collection_2019/mcan-nrcan/m38-13/M38-13-83-16-eng.pdf>.

³³ "Government of Canada Releases Recommendations for Moving Forward on Canada's First National Infrastructure Assessment" (29 July 2021), online: *Government of Canada* <<https://www.canada.ca/en/office-infrastructure/news/2021/07/government-of-canada-releases-recommendations-for-moving-forward-on-canadas-first-national-infrastructure-assessment.html>>.

³⁴ P Toft, P Wigle, JC Meranger, and Y Mao, "Asbestos and Drinking Water in Canada" (1981) 18 *Science of The Total Environment* 77 at 77, 80.

³⁵ D L Wang, Y Hu, and R Chowdry, "Safety and Waste Management of Asbestos Cement Pipes" (28 August 2010) at 2, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

³⁶ D L Wang, Y Hu, and R Chowdry, "Safety and Waste Management of Asbestos Cement Pipes" (28 August 2010) at 4, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

³⁷ D L Wang, Y Hu, and R Chowdry, "Safety and Waste Management of Asbestos Cement Pipes" (28 August 2010) at 2, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

be protected in order not to disturb the asbestos-containing material and prevent opportunities for human or environmental exposure.³⁸

We request a response from ECCC and TC for Questions 15-18.

Question 15: Are systems or strategies in place to collect or dispose of AC pipes? If so, please provide details on these processes. If not, why not?

Question 16: Waste containing asbestos may be exported with limited obligations for importing countries to give prior informed consent and could end up in jurisdictions without adequate legislation to protect workers and the public from asbestos exposure. Water pipes that might contain lead have been raised as an issue in the United States, as some are being sent to other jurisdictions for processing.³⁹ Are AC pipes being transported from Canada to other jurisdictions for disposal? If so, are there screening or tracking processes in place for the movement of AC pipes? If not, why not?

Question 17: Asbestos is included in Part 3 of Schedule 11 of the *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations* as a “Constituent of Potentially Hazardous Waste.”⁴⁰ Schedule 3 requires the code for these constituents must be included in a notification for export permit but export permits and prior informed consent from receiving jurisdictions are not required for constituents, only for “hazardous waste.” How has this been implemented?

Question 18: Asbestos is not included as “hazardous waste” under the *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations*, meaning waste containing asbestos may be exported with limited obligations for importing countries to give prior informed consent and could end up in jurisdictions without adequate legislation to protect workers and the public from asbestos exposure. Asbestos is dangerous in even small quantities. Have steps been taken to designate asbestos as “hazardous waste?” If not, why not?

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³⁸ D L Wang, Y Hu, and R Chowdry, “Safety and Waste Management of Asbestos Cement Pipes” (28 August 2010) at 6, online (pdf): *NRC Publications* <<https://nrc-publications.canada.ca/eng/view/object/?id=de94066d-dc98-4a4e-baaa-8de831da21d2>>.

³⁹ Brian Taylor, “Organization Expresses Concern About Lead Scrap Exports” (21 April 2022), online: *Recycling Today* <<https://www.recyclingtoday.com/article/lead-pipe-scrap-recycling-export-emissions-overseas-concern/>>.

⁴⁰ *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations*, SOR/2021-25, sched 11.