

July 19, 2021

Aimee Zweig, Acting Director General
Industrial Sectors and Chemicals Directorate
Environment and Climate Change Canada

Jacqueline Gonçalves, Director General
Science and Risk Assessment Directorate
Environment and Climate Change Canada

David Morin, Director General
Safe Environments Directorate
Health Canada

Transmission: Original by email

Re: Government Notice of Intent to address the broad class of per-and polyfluoroalkyl substances

Dear Aimee Zweig, Jacqueline Gonçalves and David Morin:

The undersigned organizations are submitting the following comments to supplement initial comments submitted by non-governmental organizations and expand on specific elements of the Notice posted in *Canada Gazette, Part I, Volume 155, Number 17* dated April 24, 2021 regarding the “Notice of intent to address the broad class of per- and polyfluoroalkyl substances” (“Notice”).

PFAS is a family of over 4,700 highly persistent and toxic chemicals and necessitates a class based approach. As you know, the Stockholm Convention on POPs is targeting only long-chain PFAS such as PFOA and PFOS. It has taken over 16 years to initiate a review and adoption of these long-chain PFAS for global action. One set of alternatives to those substances—PFHxS, its salts, and PFHxS-related compounds—is recommended for listing in Annex A to the Convention for consideration by the next Conference of the Parties. If only one out of more than 4700 PFAS chemicals is listed under the Stockholm Convention every ten years, we may need nearly a century to regulate all PFAS chemicals.

Moreover, the Stockholm convention allows specific exemptions for certain applications which opens the door for industry to continue using already restricted chemicals. In addition, industry is pushing towards substitution of one PFAS by another non-regulated PFAS while non-fluorinated alternatives are available.

The recent commentary published in ACS Publications suggests that while “the PFAS industry claims that the chemicals’ use in consumer goods and industrial applications brings wide benefits” it nevertheless “fails to mention the cost of exposure, which are

long-term, wide-ranging, routinely externalized onto the public, and disproportionately experienced”.

The cost of inaction report “A socioeconomic analysis of environmental and health impacts linked to exposure to PFAS”, estimates the cost of inaction at €52 – €84 billion annually for health-related costs for all countries of the European Economic Area and at €46 million – €11 billion annually for environment-related costs for the European Nordic countries.

Thus, we support the decision of the government of Canada to:

- continue to invest in research and monitoring on PFAS;
- collect and examine information on PFAS to inform a class-based approach; and
- review policy developments in other jurisdictions.

While the government has outlined an intent to release a State of the PFAS Report within two years, the timeline should be shortened and clearly outline the definitive direction that such a report will make to determine PFAS as a class under Section 64 of CEPA. The PFAS Report noted in the Notice only indicates that the government will “summarize relevant information on the class of PFAS.” What is needed is a definitive commitment to complete an assessment that not only focuses on the hazardous properties of PFAS as a class, but also the range of industry and product sectors that use PFAS; an assessment of PFAS-free alternative on the market, and recommendations about how consumers, workers and local communities can have access to information about PFAS use and releases. The proposed approach means that any efforts to make a determination under section 64 of CEPA for the class of PFAS will take longer than two years. It is not sufficient to simply focus on data collection by expand the monitoring of PFAS in the environment – the efforts on PFAS must include a roadmap to move to informed substitution and innovation with safer products and chemicals. ***We urge the government to use the full scope of its tools under CEPA to collect and generate data (including section 71 surveys) to cover these issues (PFAS free alternatives, accessing information on PFAS use and release). Acknowledging the urgency of ongoing exposure to these ‘forever chemicals’ we urge that the government complete its assessment of PFAS as a class within one year.*** Models currently exist for the scope of this assessment, as for example within the European Commission’s Chemical Strategy for Sustainability.

Preventative, Precautionary Approach for PFAS as a Class

The objective of the “Notice” does not indicate a commitment to take substantial measures on PFAS at this time but rather is focused on the collection of data on the class of PFAS. As proposed above, we believe that Canada’s approach not only needs to be more restrictive and preventive with regard to highly toxic and persistent

chemicals such as PFAS, but also be more transparent about where PFAS is found and what measures Canada is taking towards informed substitution.

Shift to Informed substitution and full public information disclosure

The urgency to push PFAS-free alternative products and industry practices within Canada is now paramount. Growing evidence continues to demonstrate the impacts of PFAS to health and the environment. The study Concentrations of perfluoroalkyl substances (PFASs) in human embryonic and fetal organs from first, second, and third trimester pregnancies reveals that PFAS break the placenta barrier and are present in fetus during all stages of development. Another study suggests that “The increased burden of PFAS in children has the potential to affect health throughout childhood, development and potentially later in life.”

Canada’s approach should include a clear shift to informed substitution. With this approach, it is obvious that Canada should restrict industry from substituting PFAS chemicals with fluorinated alternatives and encourage product manufacturers to use safe non-fluorinated and non-chemical alternatives.

In September 2016, the twelfth meeting of the Persistent Organic Pollutants Review Committee (POPRC 12) presented a Consolidated Guidance on alternatives to PFOS and its related chemicals. The Guidance inter alia explains that ‘currently there are no parties registered for specific exemptions for carpets, leather and apparel, textiles and upholstery’ meaning that PFOS-related chemicals should no longer be used on these products. The Guidance further admits that many alternatives for PFOS-related chemicals and mixtures have been claimed as Confidential Business information (CBI) and thus could not be disclosed and “these registered substances and mixtures have included short-chain PFAS and various fluorinated telomers”.

The whole issue of public access to information is key to moving any PFAS policy forward. There are thousands of PFAS that Canadians are unknowingly exposed to through household consumer products, food contact material, and more. The majority of these uses have never been regulated or even identified. Canada should address gaps in information disclosure of PFAS chemicals in products and in industrial facilities and releases to facilitate easy to understand access to information and product labeling. We have a lack of such transparency in Canada which is highlighted by the comparatively wide range of information available to US citizens.

Consumers will increasingly ask for products with no PFAS. Without government support for labeling it will fall on brands and retailers to disclose these chemical

ingredients. The result is some company leaders may make this information publicly available while others will not. The government needs to level the playing field by mandating chemical ingredient disclosure in consumer products. This can be achieved on line or providing the information on packages.

But public access to information needs to go beyond labeling to full disclosure of location specific monitoring data for PFAS in drinking water and groundwater, as well as monitoring data for PFAS in sludge spread on agricultural land. Communities living near airports and military bases are increasingly concerned that firefighting foam containing PFAS may have contaminated their drinking and/or groundwater yet there is no public access to information about site specific monitoring data for monitoring of PFAS. A recent CBC 3 part program on PFAS made a map of PFAS contamination 'hotspots' available to the public, which will raise public awareness and concern. The government should regularly do something similar and make it widely available to the public.

It should be noted that people living in Canada's Arctic are at a higher risk due to PFAS exposure via contaminated food chain. A study published in 2019 revealed PFOS, PFOA, PFHxS and PFNA in First Nation children and youth from Quebec. The study concludes that "Exposure to PFASs in children has been associated with alteration in thyroid hormones, which have critical roles in brain function"¹. A follow up study of PFAS in pregnant women in Nunavik identified "a positive association between marine country foods consumption and higher exposure to PFAAs"².

The scope of work on PFAS should therefore assess the degree of openness and public access to information about PFAS use and disposal in local communities. This would also include the specific sites where PFAS waste is being imported into and where it is disposed of in Canada. The burden on vulnerable populations who face cumulative impacts from multiple releases of hazardous chemicals must be addressed. Without full disclosure and access to information on PFAS, it is difficult, if not impossible for affected communities to engage effectively and provide meaningful input in public engagement processes to assess and review PFAS as a class.

Recent studies, including "Fluorinated Compounds in North American Cosmetics" released in *Environmental Science and Technology Letters* in June 2021, demonstrated the importance of full public disclosure of ingredients used in cosmetic products, particularly PFAS. Confidential Business Information claims for PFAS should not be

¹https://neuro.unboundmedicine.com/medline/citation/31029975/Exposure_to_perfluoroalkyl_substances__PFAS__and_associations_with_thyroid_parameters_in_First_Nation_children_and_youth_from_Quebec

² [Perfluoroalkyl acids in pregnant women from Nunavik \(Quebec, Canada\): Trends in exposure and associations with country foods consumption - PFAS Central](#)

allowed. The lack of full disclosure and the limited information on PFAS throughout the supply chain creates significant challenges to better understand what products may contain PFAS. ***It is necessary that any assessment of PFAS as a class address the issue of disclosure along supply chains and public access to PFAS ingredients in products available in the Canadian market.***³

The need for community access to information about PFAS contamination around military training sites, airports and firefighting training facilities

Over the last few decades, the use of PFAS-containing firefighting foam at airports and military bases is acknowledged as a significant global source of water pollution. This has promoted airports around the world, such as Heathrow in the UK and 90% of airports in Australia, to use fluorine-free (PFAS-free) firefighting foam products. In 2019 Transport Canada announced they would allow all airport operators to use fluorine-free foam if they chose to do so, but did not make this a regulatory requirement and it is up to the individual airport to voluntarily choose to buy PFAS-free foam. It is critical that the work on PFAS include a comprehensive look at firefighting foam containing PFAS used in airports, military bases and firefighting training facilities. Currently very little information is made available to the public about the use of firefighting foam containing PFAS. We also do not know which airports may be using PFAS free firefighting foam. However, the recent CBC coverage on PFAS included a map of PFAS hotspots across Canada, many of which include PFAS contamination sites in locations with airports.⁴

The public also needs access to information about clean up plans for these contaminated sites and who is responsible for financing the cost of clean up.

Remove Exemptions for PFOS, PFOA and LC-PFCAs

As Canada prepares its assessment of PFAS as a class, the government can take more immediate action by removing exemptions in current regulations. In line with the Stockholm Convention, Canada now regulates PFOS, PFOA, LC-PFCAs. However there are a number of important restrictive steps the government can take now to better address ongoing issues with long chain PFAS. Current actions should be taken to remove any remaining exemptions for PFOS, PFOA, LC-PFCAs as proposed in the 2018 Consultation Document, particularly regarding the use of PFAS in aqueous firefighting foam. We also note the need for changes to fluorotelomers included in the Prohibition of Certain Toxic Substances Regulations which currently permits the use of

³ Whitehead, H.D. et. al. 2021. Fluorinated Compounds in North American Cosmetics. In Environ. Sci. Technol. Lett. See : <https://doi.org/10.1021/acs.estlett.1c00240>

⁴ <https://www.cbc.ca/radio/quirks/nov-7-fast-radio-bursts-in-our-galaxy-monkeys-with-a-puberty-switch-and-more-1.5789388/forever-chemicals-can-have-far-reaching-consequences-need-more-regulation-in-canada-scientists-say-1.5789395>

these fluorotelomers in manufactured items. No proposed changes have been made to remove the use of fluorotelomers nor clear rationale has been presented to support the continued use of the fluorotelomers in manufactured items (exported or imported) into Canada.

Without further delay, we urge the government to finalize the removal of all exemptions for PFOS, PFOA and LC-PFCAs as proposed in the 2018 consultation document. In doing so, we ask the government to use the indicative list of PFOA, its salts and PFOA-related compounds that will be available on the Convention's website before the tenth meeting of the Conference of the Parties. The list will be prepared according to the decision made at the ninth Conference of Parties to the Stockholm Convention (see paragraph 9 of decision SC-9/13).

Relevant PFAS Resources

Our organizations have produced a number of resources and submissions highlighting concerns related to PFAS and the need to take action on the class of PFAS. Here are a few resources and submissions.

- 1) Thorpe, Beverley. Scoping Per- and Polyfluoroalkyl Substances Releases from the Recycling of Paper and Textiles and their Implications for the Great Lakes-St Lawrence River Ecosystem: Identifying Opportunities to Address Toxicity of Products in a Circular Economy. (2019) Prepared for the Canadian Environmental Law Association. <https://cela.ca/wp-content/uploads/2019/10/Report-PFAS-Sept-2019.pdf>
- 2) The Growing Threats of PFAS: The Forever Chemicals. A call for Canadian Citizen Action to protect the Great Lakes – St. Lawrence River Ecosystem (Fact Sheet) (2019), Prepared for the Canadian Environmental Law Association. <https://cela.ca/wp-content/uploads/2019/10/PFAS-Fact-Sheet.pdf>
- 3) Great Lakes Lessons from the Past: Relevance for Today's PFAS Campaigns – Webinar, May 6, 2020. Webinar Recordings <https://cela.ca/great-lakes-lessons-from-the-past-webinar/>
- 4) PFAS and the Great Lakes: The Need for Binational Action (Blog), by Michael Murray, Ph.D., U.S. Co-chair, Toxics-Free Great Lakes Binational Network; Staff Scientist, National Wildlife Federation Great Lakes Regional Center, and John Jackson, Canadian Co-chair, Toxics-Free Great Lakes Binational Network (April 14, 2021). See <https://cela.ca/guest-blog-pfas-and-the-great-lakes-the-need-for-binational-action/>
- 5) NGO Comments on the draft of Canada's Great Lakes Strategy for PFOS, PFOA and LC-PFCAs Risk Management (May 26, 2021). A submission by 27 non-governmental organizations (updated as of June 1, 2021) in response to the draft of Canada's Great Lakes Strategy for PFOS, PFOA and LC-PFCAs Risk

Management (draft Strategy) released on April 26, 2021. Prepared by Olga Speranskaya, Health Environment Justice Support with the Toxics-Free Great Lakes Binational Network

From these submissions and resources, we highlight the need to focus the work ahead on PFAS on the following issues:

Listing all PFAS in CEPA (existing and new)

The class of PFAS includes over 4,700 substances but recent studies indicate that the class includes closer to 6,300 PFAS substances. Canada's efforts to regulate PFOS, PFOA, LC-PFCAs and fluorotelemers under the Prohibition of Certain Toxic Substances Regulation account for several hundreds of these substances. The public does not know how many PFAS substances are used in Canada. Part of this exercise should involve identifying and listing all PFAS substances that are listed under the Domestic Substances List as well as those PFAS substances that have been introduced to Canada through the New Substances Notification Regulations under CEPA. Access to the complete list of PFAS is important for the work outlined in the "Notice". Listing all PFAS will demonstrate what substances would be considered in a risk assessment and subject to any management measures. ***The government should release a complete list of all PFAS with their CAS RN and chemical name in the DSL and new substances program in advance of the work to be completed. In addition, any notification related to nano scale of PFAS substances should also be identified in this work.***

Life cycle approach

The Government of Canada conducts regular monitoring and surveillance of certain PFAS. For example, over the past decade, concentrations of certain PFAS in the blood of Canadians have been measured to establish baseline concentrations, track trends over time, and allow for comparisons with subpopulations. PFAS should continue to be monitored over time and reflect exposures from all sources, including air, dust, water, products, and food. PFAS in breast milk should also be monitored noting that babies are exposed to PFAS while in the womb and during breastfeeding. However it is crucial that any biomonitoring clearly identify the number of PFAS analyzed and how this compares to the range of PFAS actually used in commerce in Canada. The context is important – otherwise conclusions may be drawn that some PFAS levels are going down without acknowledging the increase of other form of PFAS.

Addressing Waste Containing PFAS

The literature increasingly details how PFAS is released from landfills both through leachate and air emissions. Substantial focus should be undertaken to monitor and report publicly on the release of PFAS from existing landfills and potential PFAS releases from proposed landfills. It is uncertain if end of life management of products and waste containing PFAS will be included in the PFAS work described in the “Notice”. Yet PFAS contamination from disposal and landfilling of waste containing PFAS as well as treatment and disposal of sewage sludge is known to occur. It is equally important to include collection of data on the volume, frequency, the origin of waste containing PFAS that is imported into Canada and how such waste is being managed through treatment, recycling, incineration or landfilled

Noting that the signed plastic free trade agreement between the US and Canada allows uncontrolled plastic waste to be imported into Canada, it is important to monitor PFAS in this waste and other waste streams. Keeping in mind that only 9-11% of Canadian plastic waste is recycled, this agreement will result in more plastic waste being dumped in landfills or incinerated. This in turn will result in PFAS leaching into the soil and ground waters and emissions into the air.

Monitoring PFAS levels in wildlife and environment

The efforts to monitor and collect data on PFAS as a class should include an expanded commitment to investigate PFAS in wildlife species and the ecosystem in keeping with the government’s commitment to protect wildlife populations. Most monitoring programs, including in the Great Lakes have focused on the main long chain PFAS: PFOS, PFOA and LC-PFCAs but it is uncertain if resources will be directed to investigate the presence of PFAS as a class in the environment. Without a class based approach it is impossible to know how extensive wildlife species are being affected by PFAS exposure at this time.

Routes of PFAS Exposure and need for a scientific update of current Drinking Water guidelines

Dietary sources, consumer products and drinking water are key routes of PFAS exposure to human health. Particular focus is required to account for and take measures that prevent the continued PFAS exposure from these sources.

The Canadian Drinking Water Quality Guidelines for PFOS and PFOA are weaker than those set by other jurisdictions. Drinking water quality guidelines in Canada are maximum acceptable concentration (MAC) for PFOS in drinking water at 600 ng/L (0.600 µg/L) and for PFOA at 200 ng/L (0.200 µg/L). This is comparatively higher than the US Environmental Protection Agency lifetime health advisory of 70 ng/L (0.070 µg/L)

for PFOS and PFOA combined. Many states in the Great Lakes basin, including Michigan and Minnesota, have drafted even stricter drinking water and groundwater guidelines after conducting their own analysis of limits that would be more protective of public health. Canada's efforts to date have not presented additional guidelines for other PFAS. A consideration of current drinking water standards for specific PFAS substances should include comparison and analysis of standards with other jurisdictions and explanation of any differences. Similarly, food contact materials which has been known to contain specific PFAS also warrants substantial focus for investigation. A focus on food contact materials containing PFAS is important both to reduce direct exposure to PFAS but also to reduce levels of PFAS in waste streams Many food takeaway containers that are labeled compostable, for example, contain some of the highest levels of PFAs. Industrial composting facilities then spread PFAS contamination to forest and possibly agricultural uses. Similarly biosolids sold from waste water treatment plants for use in agriculture must be tested for PFAS. The current lack of data about PFAS levels in different routes of disposal suggest the amount of contamination in the Canadian environment may be vastly under-reported.

Informed Substitution to Avoid Regrettable Substitution

As stated earlier, the "Notice" does not mention a focus on assessing the availability of safe substitutes to PFAS. Yet, in outlining a rationale to work on PFAS it is critical to note that safe substitutes should be a valuable element of investigation for the PFAS class. Studies have shown that many PFAS, particularly long chained PFAS, targeted for regulatory measures have been replaced by short chain PFAS. These short chain PFAS have demonstrated to be as problematic and persistent and show similar toxic impacts to the long chain PFAS they replaced. The European Union has established a clear goal of eliminating PFAS unless uses can be argued to be essential – and even these uses would be time limiting pending the replacement with safer substitutes with inherently lower hazards. The current proposal mentions the need for 'informed substitution' but gives no clarification as to how the government intends to assess and promote the use of safer chemicals. The lack of focus on informed substitution requirements in our current regulatory framework makes it difficult and almost impossible to demonstrate the benefits to aiming for a prohibition of specific PFAS.

Canada's effort should also include preliminary thoughts on what would constitute essential uses for PFAS where no safe substitute is currently available. The identification of PFAS application in these situations provides the users and those responsible manufacturers appropriate triggers to explore innovative approaches and identify opportunities to replace specific PFAS use. Such applications could also identify where additional resources for monitoring and surveillance are required by the proponent and government.

Fluorine-free firefighting foam needs more incentives

In 2019 Transport Canada announced they would allow all airport operators to use fluorine-free foam if they chose to do so, but did not make this a regulatory requirement. The government assessment of PFAS as a class must incorporate how safer fluorine-free firefighting foam for Class A and B fires will be promoted, including access to information for firefighters about PFAS health impacts.

Post Data Collection and Public Engagement

The “Notice” does not provide any details on the role of the public throughout its process to collect data or review the results of its efforts to collect the data. The government should plan to release publically all the data collected on PFAS as a class and provide the opportunity for the public to provide their response to the data. This approach could include a government coordinated consultation on the data collected and how the data will be used to make a determination under section 64 of the *Canadian Environmental Protection Act*.

Thank you.

Respectfully,



Canadian Environmental Law Association

Fe de Leon, MPH
Researcher and Paralegal
Email: deleonf@cela.ca



Health and Environment Justice Support (HEJSupport)

Olga Speranskaya, PhD
Co-Director
Email: olga.speranskaya@hej-support.org



Toxics-Free Great Lakes Binational Network

John Jackson, Co-chair
Email: jjackson@web.ca



Clean Production Action

Beverley Thorpe, Consultant Program Director
Email: bev@cleanproduction.org