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Briefs

# Submission to the WCB on proposed amendments to the Occupational Health & Safety Regulation, Part 5, Occupational Exposure Limits, Benzene

A pdf of the complete submission can be found here(538 KB).

## Authority/Introduction

The BC Federation of Labour (“Federation” “BCFED”) appreciates the opportunity to provide our recommendations regarding the proposed amendments to the *Occupational Health and Safety Regulation* (“OHSR” “Regulation”) Part 5, Occupational Exposure Limits (“OEL”s), Benzene.

The Federation represents more than 500,000 members of our affiliated unions, from more than 1,100 locals working in every aspect of the BC economy.

The Federation is recognized by the Workers’ Compensation Board (“WCB” “Board”) and the government as a major stakeholder in advocating for the health and safety of all workers in BC and full compensation for injured workers.

The BCFED is pleased to have the opportunity to participate in the consultation on proposed occupational exposure limit for benzene.

We urge the Board of Directors to seriously consider our recommendations to achieve our goal of ensuring that BC health and safety regulations set standards that will prevent workers from injury and death.

This submission was prepared in consultation with our affiliates.

**Sussanne Skidmore, President**
**BC Federation of Labour**

## Proposed revised BC exposure limit for benzene

A component of crude oil, benzene is an aromatic hydrocarbon widely used as a raw material in the production of many different products. It is also a component of wood, gasoline and tobacco smoke. Workers are exposed to benzene in a large number of workplaces, including in transportation, factories, refineries and rubber production plants, as well as shoe manufacturing and printing operations to name a few. Motor vehicle emissions, wildfire and cigarette smoke, and gas stations also produce benzene exposures for both workers and the general public. As such, workers in BC can be exposed to benzene both in environmental and occupational settings, and this represents a serious concern for both occupational and public health.[1]

Benzene has been classified by the International Agency for Research on Cancer ("IARC") as Group 1, carcinogenic to humans. Benzene exposure is linked to leukemia, multiple myeloma, non-Hodgkin lymphoma and lung cancer.[2]

In 2016, CAREX Canada estimated that 42,000 workers in BC are exposed to benzene at work (about 2% of the working population). Automotive service technicians, drivers in ground and passenger transportation and firefighters are occupations most commonly exposed to benzene in BC.[3]

In early 2025, the WCB proposed to adopt the new ACGIH eight-hour TLV of 0.02ppm and remove the existing 15-minute short-term exposure limit ("STEL") of 2.5ppm. But, following the public consultation in March 2025, the Board has revised their proposal for a new exposure limit for benzene upward. The WCB is now proposing to harmonize with the European Union's ("EU") binding OELV by adopting an eight-hour time-weighted average ("TWA") of 0.2ppm as a BC exposure limit ("EL") and withdrawing the existing 15-minute STEL (2.5ppm).[4]

In its consultation materials, the Board explained that this decision was because issues with measurement and implementation concerns were identified by stakeholders. The materials say that:

> *The revised ACGIH TLV of 0.02 ppm is not being proposed at this time due to technical feasibility and implementation considerations, including challenges with reliable real-time monitoring at very low benzene concentrations.*

The Board's most recent public consultation materials were only one page in length and did not provide any additional detail about the specific measurement challenges or "implementation considerations" that determined the Board's decision to propose adopting the higher EU OELV.

In the November 2025 pre-consultation session, however, a bit more information was offered by the Board. Here, they explained that while lab-based, validated sampling methods can measure very low benzene levels [including below 10% of the American Conference of Governmental Industrial Hygienists ("ACGIH") Threshold Limit Value ("TLV")], current direct reading instruments like photo-ionization detectors ("PIDs") are limited in their ability to distinguish benzene from other air contaminants and to reliably measure benzene levels at (or below) 10% of the new ACGIH TLV in real-time.

In particular, entry into some higher hazard confined spaces requires pre-entry testing and continuous monitoring of the atmosphere to protect workers. In these situations, accurate real-time measurement of very low levels of benzene could be a challenge if the lower ACGIH TLV were adopted.

The Board noted the oil and gas industry was especially concerned about the initial proposal to adopt the new ACGIH TLV. Submissions from the oil and gas sector identified the real-time measurement challenges outlined above. The industry also pointed to expected implementation issues, which included concern that additional hazards may be created by an increased reliance on respiratory protection and that there would be "adverse economic impacts on existing and future capital projects, due to time and resource demands to implement engineering controls." More specific information about the nature or scale of the potential "adverse economic impacts" has not been made available to worker representatives or the public by the Board or by oil and gas industry representatives.

During the same pre-consultation session, stakeholders identified that currently there are practical challenges to managing benzene exposures during wildfire fighting. Smoke exposure, long shifts, off-shift exposures, chainsaw use and emissions from other combustion engines all contribute to benzene exposures for wildfire fighters, and a BC Wildfire Service representative indicated it would be difficult for the agency to comply with the lower ACGIH exposure limit.

Overall, the Board's currently proposed approach would establish a lower exposure limit for benzene by reducing the existing BC EL by more than half, from 0.5 ppm to 0.2 ppm. But the exposure limit now proposed (the EU's OELV of 0.2ppm (eight-hour TWA)) is 10 times higher than the revised ACGIH TLV of 0.02ppm that was initially proposed by the Board 18 months ago.

The BCFED strongly disagrees with the Board's proposal to adopt the EU's OELV. Instead, the BCFED recommends that the Board return to its initial proposal and adopt the lower ACGIH TLV of 0.02 ppm (eight-hour TWA) for benzene, along with withdrawing the existing STEL.

To start, workers in BC deserve the highest level of protection from a chemical that is a potent carcinogen. There is good evidence that serious health risks exist even at very low levels of exposure – hence the ACGIH's decision to revise its TLV downward in 2024. In 2017, the European Chemical Agency's Committee on Risk Assessment ("RAC") recommended the EU adopt a similarly low exposure limit of 0.05ppm (eight-hour TWA) in 2017 after reviewing the available scientific evidence. In its opinion on the scientific evaluation of OELs for benzene, the RAC recognized that low level exposures can still cause cancers.[5]

Undoubtedly, occupational cancers are among the most serious health effects for workers. Given that a significant number of workers in our province are exposed to benzene on the job, tens of thousands of workers would stand to benefit from greater protection from exposure to benzene. Not only would adopting the lower ACGIH limit offer better protection from the risks of low-level exposures, but it would also avoid other acute exposure effects.

Second, it is our view that the existing limitations with the real-time measurement of low levels of benzene are not an impediment to the adoption of the ACGIH TLV. Although the measurement challenges identified during the Board's consultation are legitimate, they are also surmountable. During the November 2025 pre-consultation, the Board heard that efforts to address the limits of existing PID technology are already underway. These efforts would surely be significantly accelerated with the adoption of the ACGIH TLV. In addition, the Board itself can and should act directly to support the development of technology and methods to address the measurement limitations.

And, for the vast majority of workplace exposures, accurate measurement of benzene levels as required for the revised ACGIH TLV is currently possible. Continuous, real-time measurement at very low levels is required in a very limited number of exposure scenarios. The BCFED suggests these specific situations could be addressed separately, or a transition period before compliance with the revised exposure limit is required could be established for contexts where bona fide measurement issues currently exist.

Finally, the BCFED believes that the implementation challenges identified by some stakeholders do not justify rejecting the lower ACGIH TLV.

For example, it is our view that for wildfire fighting, appropriate controls are immediately available and could be more fully implemented in BC to effectively protect these workers from low level benzene exposures. These controls include reducing shift length, rotating work assignments, ensuring workers have access to clean air in their off-shift accommodations, substituting away from gas powered equipment where possible and increasing the use of respiratory protection. Implementing these and other measures would not only address benzene exposures but would better protect wildfire fighters from other chemical exposures and a range of other hazards as well.

The Board did not provide details about the estimated costs of complying with the proposed ACGIH TLV for the oil and gas sector or other industries, or how industry concerns about costs may have influenced the Board's decision to revise its proposed EL for benzene to the EU OELV. As such, worker representatives are unable to adequately understand or evaluate the nature or the scale of the concerns put forward, or the Board's decision making in this respect. With this lack of detail, the BCFED is also deeply concerned that the Board has not thoroughly investigated the significance of the potential costs of compliance and instead has accepted vague assertions put forward by the oil and gas industry - and perhaps other sectors as well.

Further, it is our view that submissions from the oil and gas sector should be approached with some healthy skepticism by the Board. In general, oil and gas companies are well positioned to absorb additional costs related to the protection of workers' safety.[6] Second, there is a long and consistent pattern of powerful industry players, including oil and gas, chemical and manufacturing companies, actively resisting restrictions on benzene exposures for workers in the US, Europe, Canada and beyond. This history has included significant investments in research and lobbying efforts aimed at pushing back against proposed reductions in occupational exposure limits.[7]

## Recommendations

The BCFED recommends that the that the Board return to its initial proposal and adopt the lower ACGIH TLV of 0.02 ppm (eight-hour TWA) for benzene, along with withdrawing the existing STEL.

Further, the BCFED urges the Board to take steps to better understand and manage exposures for BC workers, including:

- increasing monitoring and enforcement;
- conducting outreach to improve awareness about benzene among workers and employers;
- conducting research on occupational cancers associated with benzene exposure; and

- investing in the development of validated sampling methods for real-time monitoring of benzene at very low levels.

## General comments and recommendations related to exposure limits

In past submissions, the BCFED has repeatedly raised a number of general concerns and made recommendations related to exposure limits. We want to take the opportunity to reiterate our previous recommendations.

First, the BCFED continues to be very concerned about the difficulty of finding the ACGIH list of TLVs, as many workers will be unaware that it is in the guidelines.

The ACGIH list is referenced throughout Part 5: Chemical Agents and Biological Agents in Section 5.1 Definitions, Section 5.48 Exposure Limits, Section 5.57 Designated Substances and Section 5.58 Protective Policy, but there is no reference to the ACGIH list of TLVs in these sections.

### Recommendation

The BCFED again recommends adding a note to Part 5 indicating where users can find the ACGIH lists of TLVs to improve accessibility.

Even more problematic is accessing the list of excluded chemicals, which has grown to approximately 370 exclusions. The list is found in Policy Item R5.48-1.[8] We are concerned that the list of exclusions does not include the column for notations found in the ACGIH list. The purpose of the notation is explained in the guideline as follows:

> *Notations identify substances considered carcinogens, sensitizers, and those with adverse reproductive effects under section 5.57 of the OHS Regulation. Section 5.57 deals with requirements for substitution and keeping exposure as low as reasonably achievable below the exposure limit.*[9]

Anyone, including workers, researching the excluded chemicals list will have to refer to the ACGIH list for information on the health effects of chemical exposure.

The BCFED has made this recommendation regarding the review of the ACGIH TLVs in each submission. We remain disappointed that the WCB has not implemented our recommendation.

### Recommendation

The BCFED strongly recommends that the WCB amend the list of excluded chemicals to include the notations column.

The BCFED does not support the ever-growing list of excluded substances. The rationale for maintaining current WCB OELs is the lack of validated sampling methods and laboratory analysis for the lower ACGIH OELs.

## Recommendations

The BCFED again makes the following recommendations in the belief that other requirements and practices should be used to deal with chemicals with higher allowable TLVs to ensure worker health and safety.

1. In relation to occupational carcinogens, we urge the Board to review and consider policy recommendations from Carex Canada's "Burden of Occupational Cancer in Canada," report.[10]

2. The BCFED believes adverse health effects from chemical exposures should carry more weight in the WCB's OEL Review Committee ("OELRC") decision-making process, especially when validated sampling methods, lab analysis and economic and technical feasibility issues are lacking.

3. The BCFED recommends the WCB adopt The National Institute of Health and Safety's ("NIOSH") process for classifying chemicals without OELs called Occupational Exposure Banding ("OEB"), also known as hazard banding, a process intended to quickly and accurately assign chemicals into specific categories ("bands"), which correspond to a range of exposure concentrations designed to protect worker health. These bands are assigned based on a chemical's toxicological potency and the adverse health effects associated with exposure to the chemical.[11]

4. Part 5, Chemical and biological agents, requirements for designated substances, exposure control plans and controlling exposures by elimination and substitution, must be subject to greater WCB enforcement for those chemicals on the excluded list.

5. The OELRC should use the "As Low as Reasonably Achievable" ("ALARA") principle.

6. The BCFED recommends that the WCB fund the University of Northern BC ("UNBC") lab.

7. The BCFED recommends implementing an external working group to review the OELs annually. The group, which existed from 1992 to 1998, comprised the WCB, occupational hygienists, researchers, employers and labour.

The BCFED would like to remind the WCB of its duty to ensure a robust and ongoing review process of the ACGIH TLVS.

Under Section 115 of the *Workers Compensation Act* ("WCA"), the Board has a general duty to conduct reviews of its regulations, including ongoing reviews of the ACGIH TLVs:

> *The Board must undertake a process of ongoing review of and consultation on its regulations to ensure that they are consistent with current workplace practices, technological advances and other changes affecting occupational health and safety and occupational environment.*[12]

Year after year, the list of excluded chemicals grows mainly due to the lack of validated sampling methods for the lower ACGIH levels. For years, the BCFED has consistently recommended in many submissions a need to solve this problem to better protect workers from chemical exposures.

Therefore, we reiterate that we are pleased about the agreement between the WCB and the UNBC to provide sampling and analytical capabilities to assess lower levels of exposure. We understand progress is being made as the UNBC lab expands the number of chemicals they can analyze. We have also heard there are challenges to obtaining funding to develop and validate methods, which can take years.

### Recommendation

Therefore, the BCFED strongly urges the Board of Directors to improve funding for the UNBC lab so that testing and analysis methods can continue and expand in BC.

## Conclusion

The BCFED will take this opportunity to again reiterate our concern regarding the lack of pre-consultation sessions to review the last group of ACGIH TLVs. Previously, stakeholders met twice a year to review and discuss the new and revised TLVs. The pre-consultation provided an excellent opportunity to understand stakeholder concerns, the system of classifying chemicals and the health impacts on workers. The pre-consultation sessions are an educational opportunity.

The BCFED strongly urges the Policy Regulatory and Research Division to ensure that the pre-consultation sessions for the review of ACGIH TLVs resume going forward.

The BCFED is pleased to have participated in the consultation for this specific amendment to the list of the WCB OELs, and we urge the WCB to seriously consider and implement our proposal to adopt the lower, more protective ACGIH OEL for benzene, as well as all of our other recommendations.

[1] Falzone L, Marconi A, Loreto C, Franco S, Spandidos DA, Libra M. Occupational exposure to carcinogens: Benzene, pesticides and fibers (Review). Mol Med Rep. 2016 Nov;14(5):4467-4474. https://pmc.ncbi.nlm.nih.gov/articles/PMC5101963/

[2] CAREX Canada, Benzene Profile, https://www.carexcanada.ca/profile/benzene/

[3] CAREX Canada, Benzene Occupational Exposures, https://www.carexcanada.ca/profile/benzene-occupational-exposures/.

And detailed provincial occupational exposure estimates available from CAREX Canada's eWork Online https://www.carexcanada.ca/ework/.

[4] WorkSafeBC Policy Regulation and Research Department (June 2026). Proposed Revised B.C. Exposure Limit for Benzene. Available at https://www.worksafebc.com/en/resources/law-policy/discussion-papers/proposed-revised-bc-exposure-limit-for-benzene?lang=en

[5] European Chemicals Agency (2018). Committee for Risk Assessment (RAC) Opinion on scientific evaluation of occupational exposure limits for Benzene. Available at https://www.actu-environnement.com/media/pdf/news-30907-benzene-opinion-echa.pdf

[6] Jim Stanford & Erin Weir's report "Counting the Costs: Impacts of the 2022 Oil Price Shock for Canadian Consumers and Workers" details huge increases in Canadian oil & gas profits since 2019 (p.51) https://cdn.prod.website-files.com/679d4ed301fa26e771ccafaa/68e7f6f5455ed72dca79079d_FalseProfits-March2025-Counting%20the%20Costs.pdf.

[7] See, for example, Center for Public Integrity (December 2014). Benzene and worker cancers: 'An American tragedy,' https://publicintegrity.org/environment/benzene-and-worker-cancers-an-american-tragedy/ , European Federation for Transport and Environment (November 2023) Uncovered: how a research group created by BP, Shell and ExxonMobil undermined European laws designed to protect people from cancer risks, https://www.transportenvironment.org/articles/how-concawe-a-research-group-created-by-bp-shell-and-exxonmobil-undermined-european-laws-designed-to-protect-people-from-fossil-fuel-emission-linked-cancer-risks, and Public Health Watch (2023). The Science on Benzene Keeps Getting Scarier. Industry Remains in Denial, https://publichealthwatch.org/2023/12/21/the-science-on-benzene-keeps-getting-scarier-industry-remains-in-denial/.

[8] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-policies/policies-part-05

[9] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-guidelines/guidelines-part-05#EL_Table

[10] https://www.carexcanada.ca/burden-of-occupational-cancer-in-canada/

[11] https://www.cdc.gov/niosh/exposure-banding/about/index.html

[12] https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/part-2-occupational-health-and-safety#SectionNumber:Part2Div2Sec17