

## Post-Wildfire Hazardous Materials Guidance for Local Authorities and First Nations

Wildland-urban interface fires can pose significant environmental hazards to water sources, roadways, recreational areas, and communities at large. This guidance document is aimed at assisting communities, municipalities, First Nations, and local authorities in managing the immediate and long-term environmental risks associated with wildfires. It also provides essential information for impacted community members as they plan for their re-entry into affected areas.

### Key Considerations for Community Re-Entry

Before residents re-enter their properties in the aftermath of a wildfire, several critical considerations should be addressed:

1. **Damage Assessments:** Confirm if gross or rapid damage assessments have been conducted in the impacted areas.
2. **Involvement of Qualified Professionals:** Determine whether industrial hygienists or other Qualified Professional (QPs) were included in these assessments.

Industrial hygienists, or equivalent professionals, are recommended for assessing affected areas post-wildfire. These experts can detect and address a range of hazards, including "off-gassing" (airborne chemical releases), asbestos, compressed gas cylinders, ammunition, and toxic fumes such as cyanide and sulfur dioxide that may be present in debris.

If your community has previously undergone a damage assessment with an industrial hygienist, request a comprehensive list of the current environmental hazards. This document also contains valuable information on common environmental hazards post-wildfires, along with remediation steps and follow-up guidance.

### Engaging Qualified Professionals and Environmental Impact Assessments

One of the initial steps in dealing with post-wildfire environmental hazards is to engage QPs. These experts play a critical role in evaluating the environmental impact of wildfires and devising strategies to mitigate risks for residents.

QPs should be consulted to conduct environmental assessments aimed at ensuring the safe removal, storage, and containment of environmental hazards identified within the affected community.

### Environmental Sampling and the Role of Qualified Professionals

Environmental sampling and monitoring are essential for characterizing the impacts of wildfires on various environmental aspects, including soil and groundwater. These activities should adhere to the procedures outlined in the British Columbia Field Sampling Manual. Additionally, sample analysis should follow the protocols specified in the most recent British Columbia Environmental Laboratory Manual.

It is strongly recommended that sampling and monitoring programs are designed or reviewed and executed under the guidance of an appropriate QP.



## The Significance of Qualified Professionals

QPs are individuals who possess specific knowledge, skills, training, and experience necessary to perform tasks such as environmental sampling in the aftermath of a wildfire. These experts are members of professional associations established under the *Professional Governance Act*.

For detailed information on QPs and initiating the retainment process during the environmental recovery phase visit the Ministry of Environment's webpage on [professional reliance](#).

## Concerns Surrounding Ash After a Wildfire

Ash from wildfires can contain hazardous materials such as heavy metals, asbestos, and hydrocarbons. Proper management and disposal are essential to mitigate the short- and long-term effects of ash:

**Air Quality:** Fine particles in ash, referred to as particulate matter (PM), can become airborne and contribute to poor air quality. Inhaling these particles can irritate the respiratory system, leading to breathing difficulties, particularly in individuals with pre-existing respiratory conditions like asthma or chronic obstructive pulmonary disease (COPD).

**Health Risks:** Exposure to ash can cause various health problems, including eye and throat irritation, coughing, wheezing, and exacerbation of respiratory diseases. Prolonged exposure to high levels of ash can increase the risk of respiratory infections.

**Water Contamination:** Ash can be carried by wind and rain into rivers, streams, and reservoirs, contaminating water supplies. The ash can introduce harmful chemicals and heavy metals into water sources, posing risks to aquatic life and making water unsafe for consumption.

**Wildlife Impact:** Wildlife can be affected by ash in several ways. Direct exposure to ash can be harmful to animals' respiratory systems. Additionally, the loss of habitat and disruption of food sources due to wildfires can impact wildlife populations.

**Agricultural Impact:** Ash can damage crops and reduce agricultural productivity. It may also introduce contaminants into the soil that affect the long-term health of agricultural lands.

Communities can engage in organized ash cleanup efforts with proper personal protective equipment (PPE). It's essential to follow safety guidelines provided by local authorities and health agencies during and after a wildfire to minimize exposure to ash-related hazards.

## Managing Wood Waste

Burnt and dead wood collected from wildfire-affected areas may contain wood treated with preservatives, pesticides, paints, and various metals such as nails, staples, and tin.

Proper handling of wood waste and construction and/or demolition waste is crucial to prevent injury or contact with contaminated materials. It is advised to separate waste into different types and dispose of it at the appropriate authorized waste management facility in your area.

For a comprehensive understanding of the options for using and disposing of wood waste after a wildfire, please refer to the resource "[Options for Wood Waste Use and Disposal](#)" provided by the Province.

## Food Safety Concerns for Fridges and Freezers

Fridges and freezers that have been without power for more than three days pose health and environmental risks. It is the responsibility of local authorities to coordinate the proper disposal of these appliances in the days and weeks following a wildfire.

In disaster recovery terms, fridges and freezers are often categorized as “white goods.” Residents are encouraged to contact their insurance providers to ascertain guidelines for handling home contents, including spoiled food, fridges, and freezers. When in doubt, it is best to err on the side of caution and discard spoiled food and items that have been stored in powerless refrigerators or freezers.

Tinned goods are typically safe unless the can shows signs of bulging, rust, or severe denting. Undamaged canned goods should be washed and disinfected if exposed to smoke. Food stored in cupboards, drawers, containers, open packaging, and single-service items should be discarded if exposed to heat, ash, chemicals, soot, water, or smoke.

## Propane Tanks and Safety Measures

Propane tanks present in areas impacted by wildfires are at risk of significant damage and potential catastrophic release. Safety precautions should be taken when dealing with these tanks:

- Conduct a thorough safety check before approaching or attempting to move any propane tanks. Look for visible damage, such as warping, discoloration, or melted fittings.
- Propane tanks may rupture and explode when pressure is released from the relief valve.
- It is vital to maintain a safe distance from any tanks that appear compromised or damaged and refrain from attempting to move them independently.
- If a tank is suspected of being damaged or leaking, evacuate the area immediately and contact local authorities or the fire department.
- In cases where it is safe to do so and if the valve is accessible, turn off the gas supply at the tank's shut-off valve to prevent further gas leakage.
- Under no circumstances should open flames, cigarettes, or ignition sources be used near suspected propane leaks.

Wildfires can compromise the structural integrity of propane storage facilities and tanks mounted on buildings, potentially leading to instability and structural collapse. It is imperative to stay clear of damaged structures and tanks until a QP can assess their stability. Do not attempt to repair or move damaged tanks or structures independently.

## Environmental Hazards Posed by Asbestos

Asbestos is a material that can present substantial risks to both environmental and human health following a wildfire. Asbestos is a naturally occurring mineral that has been extensively used in construction and various industries for its heat-resistant and insulating properties. When structures

containing asbestos burn, microscopic asbestos fibers are released into the air, settling on the ground and causing significant environmental and health impacts.

**Airborne Asbestos Exposure:** The most immediate concern is the release of asbestos fibers into the air during a wildfire. These microscopic fibers can be easily inhaled and pose a severe health risk, including respiratory diseases such as asbestosis, lung cancer, and mesothelioma. Asbestos exposure can occur when debris is disturbed, and the fibers become airborne.

**Soil Contamination:** Asbestos particles settling on the ground can contaminate the soil in the affected area. Over time, weathering and erosion can transport these particles deeper into the soil, potentially affecting groundwater and nearby ecosystems. Asbestos-contaminated soil poses risks to humans, wildlife, vegetation, and aquatic habitats.

**Water Contamination:** Rainfall can wash asbestos fibers from the burned soil and debris into local water bodies, such as rivers, streams, and reservoirs. This results in the contamination of drinking water and aquatic ecosystems. Asbestos in water can be harmful to fish and may require water treatment to ensure the safety of drinking water.

**Long-Term Health Risks:** Asbestos-related diseases often have a long latency period, meaning symptoms may not appear for many years after exposure. Therefore, it is crucial to monitor and address asbestos hazards in wildfire-affected areas to protect the health of residents, emergency responders, and cleanup crews.

**Mitigating Asbestos Hazards:** To mitigate the environmental hazards posed by asbestos after wildfires, it is essential to conduct thorough asbestos assessments. Establish proper handling and disposal procedures for contaminated debris and communicate mitigation work and ongoing risks to the public. Furthermore, continued environmental monitoring of air, soil, and water quality is essential to track and manage the potential spread of asbestos fibers within wildfire-affected areas.

For additional information on managing waste asbestos by homeowners, please refer to the resource "[Managing Waste Asbestos by Homeowners](#)."

## Managing Fire Retardants

Efforts to suppress wildfires often involve the deployment of fire retardant from BC Wildfire helicopters and planes. Fire retardant contains chemicals and often remains on a soil's surface, identifiable by its light red discoloration long after the fire is controlled.

Water-soluble fire retardant is commonly used in fire suppression efforts and is typically colored red using an iron oxide (rust) mixture to enhance its visibility for air crews and ground personnel. If retardant lands on houses or cars, it can usually be washed off with water. In cases where the retardant has dried, removal may require scrubbing with water or power washing using a mild detergent.

For more in-depth information on fire retardant as an environmental hazard, please refer to the resource "[Fire Retardants and Water Quality Brochure](#)."

## Pesticides Regulation

Pesticide storage in British Columbia is subject to regulation under the *Integrated Pest Management Act* and its associated regulations. These requirements apply to all users, including agricultural operators, irrespective of the quantity of pesticides stored.

Ensure that commercial pesticides are stored securely in locked, vented, and signed facilities when not in use. Specific standards for agricultural chemical storage are set by the Agrichemical Warehousing Standards Association (AWSA), but these primarily apply to the wholesale and retail sector, not individual agricultural users.

All pesticides in Canada are federally regulated by Health Canada's Pest Management Regulatory Agency. It is imperative that pesticides are used in accordance with label directions, which typically include guidelines for storage, disposal, and spill response.

For comprehensive information on safe control, disposal, and cleanup of pesticides in British Columbia, please refer to the following resources:

- [Safe Disposal of Unwanted Pesticides](#)
- [Disposal of Rodenticides](#)
- [Pesticide Fires – Prevention, Control, and Cleanup](#)

## Conclusion

In conclusion, wildfires can leave lasting environmental impacts in their wake, affecting communities, municipalities, First Nations, and local authorities; however, with proper planning, the engagement of QPs, and adherence to recommended safety measures, these impacts can be mitigated, and communities can make a safe and sustainable recovery.

We encourage all relevant stakeholders to use this guidance document to proactively address post-wildfire environmental hazards and ensure the well-being of our communities and the environment.