



Environment
Box 2703, Whitehorse, Yukon Y1A 2C6

Potential impacts identified during the public review period	Environmental Programs Branch's response
Contact with pesticide by train passengers/workers	Occupational risks to handlers are not of concern when used according to label directions. The applicant is a certified pesticide applicator who is trained to avoid exposure while applying pesticides. The permit and pesticide label would require personal protective equipment and safety procedures for workers handling the product.
Contact with pesticide by residents of Carcross or recreational lake/shore users	Non-occupational risks are not of concern when used according to label directions. A spill is a very unlikely occurrence. A spill in the storage area in Carcross could be cleaned up more easily than a spill along the tracks and thus human exposure would be minimized.
Impacts to drinking water (Bennett Lake)	Considering the mandatory buffer distance of 15 metre (m) to aquatic habitat, it is highly unlikely that any detectable amounts of pesticide would enter Bennett Lake and very highly unlikely that any detectable amounts (let alone amounts exceeding the drinking water standard of the <i>Contaminated Sites Regulation</i> for glyphosate (280 µg/L) would be found at the drinking water intake.
Cancer risk	Pesticides are registered for use by Health Canada only if the level of exposure to Canadians does not cause any harmful effects, including cancer. The two products in this application were not known to be carcinogenic. Glyphosate and imazapyr have very low acute toxicity by oral and dermal exposure to terrestrial animals and to humans. A person would have to consume extremely high (nearly impossibly high) amounts of impacted harvested meat to be impacted by pesticide products.

<p>Potential impacts to fish and aquatic life due to surface water or groundwater movement</p>	<p>When applied with the mandatory minimum 15 m buffer distance to water, it is highly unlikely that any detectable amounts of pesticide would impact the aquatic environment.</p> <p>However, the Environmental Programs Branch had doubts that the methodology to apply the pesticides as proposed in the project application will be able to successfully meet the requirement for the minimum buffer distance.</p> <p>Due to glyphosate’s relatively high toxicity to aquatic plants, a failure to adhere to buffer zones could lead to short-term impacts on aquatic plants. The effect could mean damage or death to algal populations and plant populations in the area of the lake near to the right-of-way.</p> <p>The applicant stated that White Pass & Yukon Railway (WP&YR) employees would mark the tracks to indicate areas in which pesticides could be sprayed; however, the applicant asserted that “The ultimate determination will be made by a licensed applicator who is physically on site and not by a satellite map nor painted ties.” This approach is not satisfactory, especially in a forested area where the distance to aquatic habitat (i.e. the edge of the lake) will not always be visible from the applicator’s perspective (i.e. on a moving train).</p> <p>The Environmental Programs Branch’s analysis shows that the area along the right-of-way that is eligible for spray is highly fragmented. This fragmentation compounds the difficulty of applying pesticides only on the areas eligible for spray.</p>
<p>Impacts to terrestrial habitat (to animals and plants)</p>	<p>A large portion of the terrestrial habitat outside of the buffer zone is Carcross/Tagish First Nation (C/TFN) Settlement Land, including both Category A and B Settlement Land.</p> <p>The application states: “Our current proposal includes a 15 m buffer from open bodies of water” but does not mention the Vantage XRT label requirement for a 15 m buffer zone to terrestrial habitat. The definition of “terrestrial habitat” includes forested areas. Along the right-of-way, the forested area begins immediately outside the edge of the cleared area, and thus this area is considered terrestrial habitat.</p>

	<p>The railway right-of-way is exactly 30m wide. The pesticide label requires that the buffer zone be determined from the outer edge of the boom. The boom is 4.88 m wide and centered on the middle of the tracks. Thus, the cumulative length of the boom (4.88 m) and the buffer zone (30 m in total width) equals 34.88 m, which exceeds the width of the right-of-way (30 m). This means that the outer edge of the buffer zone would cross the boundary of the right-of-way into the terrestrial habitat.</p> <p>Due to the known toxic effects of these pesticides (which are designed to kill broad-leaf plants) on vegetation, this means that there would be likely, significant, adverse effects on terrestrial habitat (and on Settlement land) outside the railway right-of-way and these effects may not be mitigable in the short term.</p> <p>Health Canada allows reduction of buffer zones through use of a calculator that considers wind speed, wind direction and specialized equipment to reduce spray area. In correspondence, Environmental Programs Branch notified the applicant about the calculator. The applicant did not indicate any proposal to reduce the buffer zone width through use of the calculator.</p>
<p>Dead vegetation contributing to fire risk</p>	<p>Dead non-woody vegetation (e.g. the weed species targeted in this application) decomposes fairly rapidly and would not have posed a measurable increase in fire risk. Fire risk is calculated based on dead woody vegetation (e.g. trees).</p> <p>Any increased risk of fire would be mitigatable by removal of dead vegetation after mechanical removal or pesticide application</p>
<p>Impacts to local employment</p>	<p>The use of pesticide as compared to use of mechanical methods will reduce employment opportunities; however WP&YR has already committed to manual removal of weeds in areas ineligible for pesticide application.</p> <p>This is an avoided benefit, but not adverse effect. This employment has likely been occurring for the last number of years; however it is not clear if WP&YR staff or Carcross residents have undertaken this work in previous years.</p>

<p>Impacts to tourism</p>	<p>It is highly unlikely that there would be an ongoing visual evidence that pesticide application has occurred. Removal of vegetation will be visible, but this would occur regardless of use of pesticide or mechanical methods.</p> <p>It is possible that this activity could have positive impacts to tourism due to increased safety of train travel.</p>
<p>Buffer distance inadequate</p>	<p>The Pest Management Regulatory Agency of Health Canada is the primary regulatory for pesticide use in Canada and sets the standards for application of pesticides, including buffer distances. Health Canada has indicated that a 15 m buffer is adequate for the products proposed in this application to prevent unacceptable risk to aquatic and terrestrial habitat.</p>