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RE: **RE: CN 2018 SAFETY ACTIVITIES IN BRITISH COLUMBIA**  
**FILE NO. 4600-1**

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Dear Ms. Caunce:

The present is a follow up to our correspondence dated February 22, 2018, in which we indicated that CN would provide additional information concerning our 2018 vegetation management activities within the province of British Columbia ("BC") once our program was more fully developed. Below we describe how vegetation management fits into our broader commitment and regulatory requirement to manage our right of way safely.

As part of CN's commitment to fulfilling its regulatory and safety obligations to its employees and the public, CN is committed to the principles of effectively managing vegetation within the railway system while considering and incorporating environmental and human health values.

As a railway falling under federal jurisdiction, CN is heavily regulated. Among other legislation, CN is subject to the *Railway Safety Act* ("RSA"), which has as an objective to promote and provide for the safety and security of the public and personnel, and the protection of property and the environment, in railway operations. By virtue of the RSA and under the oversight of Transport Canada, CN is required to maintain its equipment, right of way and vast interprovincial infrastructure in a safe, efficient and responsible manner. CN re-invests approximately 20% of its revenues every year towards maintaining the safety and integrity of our network, and to support customer demand – over \$12 billion in the last five years and a record \$3.2 billion planned for 2018.

For example, across our 13,488 route-miles of track in Canada, CN must ensure that every public and private grade crossing meets sightline and other requirements of the *Grade Crossing Regulations*. Where trees, brush

or other vegetation impedes the view of a motorist of oncoming trains, public safety can be severely compromised. In addition, the *Rules Respecting Track Safety* ("Track Safety Rules") also require railways to ensure that vegetation which is on or immediately adjacent to the roadbed is controlled. The Track Safety Rules require that track is free of vegetation that could create fire hazards, obstruct visibility of operations and inspections, or interfere with employee track side duties. It is important to note that these risks are not limited to the tracks but extend to other parts of our right of way in a manner not always fully recognized or understood by the public.

If not managed properly, unwanted vegetation can create many safety concerns including:

- damage to structural integrity of the railway roadbed;
- inhibition of the operation of signals and switches;
- hindrance of inspections of the track structure and trains;
- contributions to trackside fires;
- negative effects on drainage of the right-of way leading to instability;
- compromise employee safety when train crews are entraining and detraining; and,
- reduction in visibility for train crews at road crossings, of signals and other track side warning devices.

Under the RSA, where such problems constitute a "threat", which is defined as a "hazard or condition that could reasonably be expected to develop into a situation in which a person could be injured or made to be ill or damage could be caused to the environment or property" – the Minister of Transport and inspectors at Transport Canada have a wide range of powers to order railways to take measures to address the threat or other concern. Transport Canada inspects vegetation control on the railway right-of-way for potential unsafe conditions related to the following:

- sight lines at railway road crossings at grade without automatic warning systems
- potential fire hazards to railway bridges, structures and adjacent property;
- the safe handling and storage of dangerous goods subject to the *Transportation of Dangerous Goods Act* transported by rail;
- restricted visibility of railway signs, signals and other track structure;
- interference with railway employees' ability to perform normal duties including inspection and maintenance of the track structure; and
- prevention of proper operation of railway signals, communication and switching systems.

It is therefore crucial for federally-regulated railways, such as CN, to be vigilant and proactive in the area of vegetation control across all our subdivisions, which cross various provincial boundaries, in an ongoing effort to ensure safety. While CN is cognizant of the importance of environmental safeguards found in the various provincial vegetation control schemes in the many jurisdictions in which we operate, we are faced with the relatively unique situation of linear cross-boundary infrastructure, coupled with critically-sensitive safety obligations that require swift attention and action when threats to railway safety are at issue.

Consistent with CN's robust legislative framework as outlined above, vegetation management activities are performed using pesticides approved and regulated by the federal government through the *Pest Control Products Act* ("PCPA") and the *Pest Control Products Regulations*. Such pesticides are used as prescribed by these federal rules and in accordance with federally mandated pesticide label requirements, including in respect of rules

governing their application. As federal legislation, the PCPA and associated regulations apply across all provincial boundaries, and can thus be uniformly relied upon across CN's railway network.

We understand that the Province has an interest in confirming that activities that take place within its borders are carried out in a safe and responsible manner that ensure that environmental, public and Aboriginal interests are protected.

CN shares these same values and works hard to ensure that its railway activities are carried out safely and in environmentally and socially responsible ways. As a federally-regulated interprovincial railway company, CN is of the view that it is not required to submit a Pest Management Plan ("PMP") for its 2018 vegetation management activities to the Province pursuant to the BC *Integrated Vegetation Management Act* and accompanying *Integrated Vegetation Management Regulation*; however, CN fully intends to carry out its activities in keeping with the high standards in place in BC.

Consequently, we have prepared a table, attached hereto as Appendix "A", outlining the elements of CN's vegetation management procedure that specifically address the information required by BC as part of a PMP. In addition to the elements covered in Appendix "A", CN will be advising the public of upcoming pesticide applications through regional newspaper notices and letters sent to municipal and Aboriginal representatives.

It is CN's hope that we can further discuss the enclosed with you in greater detail to ensure that the province understands CN's intentions for safe and responsible vegetation management activities in the coming months.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Monika Pezdek'.

Monika Pezdek  
Coordinator, Legislative Affairs

Atts.

Appendix "A"

BC Pest Management Plan Requirements vs CN Pest Management Activities

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
<i>s.58 (1) identifying information</i>	
s. 58 (1) (a) a description of the geographic boundaries of the area to which the plan applies and maps or diagrams showing proposed treatment areas within that area	CN can provide a list of the various subdivisions on which we plan to undertake our vegetation management activities in 2018 as well as the corresponding municipalities and First Nations, who will be notified directly of upcoming applications. This information will also be posted on the CN website.
s. 58 (1) (b) the person responsible for managing pests in relation to the land described in paragraph (a);	CN is working with a licensed applicator, Asplundh, who will undertake the vegetation control activities identified above on CN's behalf.
s. 58 (1) (c) the name and phone number of an individual who is the principal contact for information relating to the pest management plan.	Questions relating to vegetation control activities across CN's network should be directed to CN's Public Inquiry Line at: 1-888-888-5909
<i>s.58 (2) integrated pest management elements</i>	
s. 58 (2) (a) a description of the program that will be employed to prevent organisms from becoming pests	CN prevents the growth of problematic vegetation primarily through the application of pesticides and the selective removal of certain vegetation using non-chemical means.
s. 58 (2) (b) <u>either</u> (i) a description of the program that will be employed to identify pests targeted by the plan, <u>or</u>	N/A
(ii) identification of the pests targeted by the plan;	The three categories of pests that are targeted by CN's vegetation control activities are: <ul style="list-style-type: none"> <li>• Herbaceous broadleaves and grasses: Herbaceous broadleaves and grasses are the most frequent types of vegetation growing on track ballast, within station grounds, railway yards, and around shops, buildings, signal and switching infrastructure, and material storage areas.</li> <li>• Woody vegetation (i.e., trees and shrubs): Vegetation becomes problematic when woody vegetation invades the ballast or the shoulder of the ballast. Woody trees and shrubs found on the right-of-way can reduce safety by limiting visibility and access to switches and other equipment. Woody vegetation has the potential to disrupt the functioning of</li> </ul>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
	<p>slide detectors or blow down into the tracks. Woody vegetation that is overhanging too close to power lines within the right-of-way can present a fire hazard. Woody vegetation also increases the amount of organic debris that is deposited onto the ballast, thereby increasing the potential for increased growth in unwanted vegetation and/or fire.</p> <ul style="list-style-type: none"> <li>• Noxious weeds and invasive plants: Noxious weeds and invasive plants are considered to be problem vegetation because they pose a safety hazard to the operation of the railway and also have the ability to displace and reduce native plant species in the area. Noxious weeds are of concern to agriculture where they pose a threat of infestation to farm crops, pasture or range lands. Invasive Plants out-compete native plant species reducing biodiversity and wildlife habitat.</li> </ul>
<p>s. 58 (2) (c) a description of the monitoring program that will be employed before or during the pesticide use for assessing pest populations, environmental conditions and damage caused by pests, which program must include a description of</p> <ul style="list-style-type: none"> <li>(i) the monitoring methods,</li> <li>(ii) the frequency of monitoring</li> </ul>	<p>CN track supervisors, as part of their regular weekly inspections, conduct incidental/cursory monitoring of weed/vegetation populations on rights-of-way, main tracks, sidings, yards, station tracks and crossings. Priority is given to making a visual assessment of vegetation concerns impacting track conditions, at roadway crossings where sightline visibility is impaired, and vegetation conditions within the right-of-way that may present a hazard. This information is supplemented with information provided by CN Safety Committees and from employee safety meetings regarding potential hazards to employees and the public associated with vegetation. These meetings are held on a regular basis (generally monthly or more frequently). In addition, CN Track Supervisors and CN's Public Inquiry Line also record complaints on an ongoing basis related to the presence of vegetation from the public, or requests for noxious weed/invasive plant control.</p>
<ul style="list-style-type: none"> <li>(iii) the data that will be collected;</li> </ul>	<p>CN track supervisors, as part of their regular weekly inspections, will conduct visual incidental/cursory monitoring of weed/vegetation populations and document the following:</p> <ul style="list-style-type: none"> <li>• A visual assessment of track conditions (with respect to weed growth);</li> <li>• Road and pedestrian crossings with respect to the extent of weed/vegetation growth and to document if the required sightlines are being maintained;</li> <li>• Vegetation conditions within the rights-of-way to determine if trees and brush are a safety issue; and,</li> <li>• The locations of noxious weed and invasive plant species/populations</li> </ul>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
	CN's pesticide applicator is given a list of all known culvert and bridge locations within the proposed treatment area, in addition to any other CN supplied sensitive no spray areas and is required to familiarize themselves with this information.
s. 58 (2) (d) the injury thresholds that will be applied in deciding whether a pesticide treatment is necessary and an explanation of (i) how the thresholds were chosen, and	Pursuant to the <i>Rules Respecting Track Safety</i> under the <i>Railway Safety Act</i> , federally-regulated railway companies have the following obligation:  <i>Vegetation on railway property which is on or immediately adjacent to roadbed must be controlled so that it does not:</i> <i>(a) become a fire hazard to track-carrying structures;</i> <i>(b) obstruct visibility of railway signs and signals;</i> <i>(c) interfere with railway employees performing normal track side duties;</i> <i>(d) prevent proper functioning of signal and communication lines; or</i> <i>(e) prevent railway employees from visually inspecting moving equipment from their normal duty stations.</i>  Vegetation cover that does any of the above will be controlled using pesticides or brush cutting or a combination of the two.
(ii) how the thresholds will be applied;	See above.
s. 58 (2) (e) pest treatment options including (i) a description of the pesticide and non-pesticide treatment methods of controlling pests that may be used,	CN employs both mechanical (e.g. brush cutting) and chemical methods (e.g. pesticides) of controlling vegetation.
(ii) the rationale for selecting the treatment methods described under subparagraph (i),	CN's determination of which vegetation control method to use is based on a number of considerations, the first of which is safety requirements. Other considerations include: <ul style="list-style-type: none"> <li>• Urgency of the required treatment;</li> <li>• Species of problem vegetation (conifer/deciduous);</li> <li>• Location of the problem vegetation (ballast, right-of-way, crossings, bridges, rail yards, station grounds);</li> <li>• Accessibility to the problem vegetation (terrain, slope, remote areas);</li> <li>• Safety issues (for the public, CN personnel and contractors);</li> <li>• Risk of fire;</li> </ul>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
	<ul style="list-style-type: none"> <li>• Objectives of the vegetation management;</li> <li>• Consequences of not taking action;</li> <li>• First Nations and public concerns;</li> <li>• Aesthetic considerations;</li> <li>• Short and long-term impacts of the method(s) being considered;</li> <li>• Expected efficacy of the method(s) being considered;</li> <li>• Benefits and limitations of each method;</li> <li>• Environmental considerations (proximity to water sources, bodies of water, food growing or planted for human consumption, riparian areas, wildlife and fish habitat); and,</li> <li>• For herbicide treatments, the choice of herbicide, application methods/techniques and application equipment.</li> </ul>
(iii) the benefits and limitations of each treatment method described under subparagraph (i), and	<p>In many areas, non-chemical methods cannot be employed or are not effective such as track ballast where there are no effective non-chemical methods of effectively and safely controlling vegetation. In certain areas, mechanical methods cannot be used for vegetation control. Steep terrain (e.g. on the outer right-of-way) may limit access by mowers and can be dangerous for a chain saw operator. Exceedingly dense brush can create both a visibility and a physical hazard to workers and can result in an increased incidence of injuries due to slipping and tripping while operating power equipment. Mechanical methods are non-selective, and can also lead to soil erosion by removing a high percentage of the vegetative ground cover. They can also damage compatible plant species such as low growing shrubs and grasses. Biodiversity is reduced when non-selective mechanical methods are used to remove most of the vegetation from a site. From an economic viewpoint, mechanical methods have been shown to cost, on the average, four times more per hectare than control of the same vegetation using herbicides.</p>
(iv) a description of how a decision to use treatment methods will be made;	See above.
s. 58 (2) (f) a description of the monitoring program that will be employed for evaluating the effectiveness of the pesticide use on pest populations and the environment, including effects on organisms other than targeted pests, by comparison with the	Visual inspections by CN track supervisors will be completed after the effects of chemical treatment are well established, to record the effectiveness of the treatment, including adverse effects, and if required environmental protection measures were taken.

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
<p>information collected under the program described in paragraph (c), which program must include a description of:</p> <p>(i) the monitoring methods,</p>	
<p>(ii) the frequency of monitoring, and</p>	<p>Post-treatment monitoring is generally done in late summer or early fall.</p>
<p>(iii) the data that will be collected.</p>	<ul style="list-style-type: none"> <li>• Name and contact information of the track supervisor conducting the inspection;</li> <li>• Date of inspection;</li> <li>• Treatment date;</li> <li>• Location of treatment (subdivision, track mileage, total miles treated);</li> <li>• Areas where herbicides were applied (ballast or right-of-way);</li> <li>• Track type (mainline, secondary, branch, sidings, yards, other tracks);</li> <li>• Treatment effectiveness (ineffective, semi-effective, effective);</li> <li>• Environmental protection measures taken; and,</li> <li>• Adverse effects observed and comments.</li> </ul>
<p><i>s.58 (3) operational elements</i></p>	
<p>s.58 (3) (a) a description of the methods of handling, preparing, mixing, applying and otherwise using pesticides that will be employed under the plan including a description of the following procedures:</p> <p>(i) procedures for safely transporting pesticides;</p>	<p>Minimum specifications for safe transport of pesticides for use on CN property are as follows:</p> <ul style="list-style-type: none"> <li>• Pesticides shall be transported in accordance with their labels and the product Safety Data Sheet (SDS) and Workplace Hazardous Material Information System (WHMIS) guidelines;</li> <li>• Ensure that all documents and placards are carried in, or placed on, transport vehicles as required under the <i>Transport of Dangerous Goods Act</i>, R.S.B.C 1996, c. 458;</li> <li>• Read and understand the pesticide labels;</li> <li>• Limit the quantity of pesticides carried at any one time to no more than what is necessary for each project; and,</li> <li>• Ensure that pesticides are carried in appropriate labeled containers and in locked compartment to prevent spillage and unauthorized removal.</li> </ul>
<p>(ii) procedures for safely storing pesticides;</p>	<p>Minimum specifications for safe storage of pesticides for use on CN property are as follows:</p> <ul style="list-style-type: none"> <li>• Pesticides are stored, mixed, loaded and applied in accordance with the product label and applicable regulations;</li> </ul>



s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
	<ul style="list-style-type: none"> <li>• Pesticides are kept in their original containers or in appropriate containers that have the trade name, active ingredient concentration and pesticide registration number affixed to the outside of the container;</li> <li>• Storage facilities are locked when left unattended, ventilated to the outside atmosphere, are entered only by persons authorized to do so, and that there is a placard clearly stating "WARNING - CHEMICAL STORAGE - AUTHORIZED PERSONS ONLY"; and,</li> <li>• Storage facilities are separate from work and living areas, and away from food, flammable materials, bodies of water and water sources.</li> </ul>
(iii) procedures for safely mixing, loading and applying pesticides;	<p>Minimum specifications for safe mixing, loading and application of pesticides for use on CN property are as follows:</p> <ul style="list-style-type: none"> <li>• Only certified applicators or individuals directly supervised by a certified applicator mix, load and apply pesticides;</li> <li>• Any contractor has adequate first aid kits, and all personnel have the required personal protective equipment;</li> <li>• Treatment areas are identified, environmental setback distances are known, and that product labels, product information sheets, and SDS are available on site;</li> <li>• All mixing and loading is undertaken only in areas at least 15 meters from a waterbody or sensitive no spray area;</li> <li>• Pesticides are prevented from entering any waterbody or sensitive no spray area by maintaining a setback as directed by the pesticide label;</li> <li>• Application methods will be consistent with recommended and accepted procedures and will be implemented to ensure an even distribution of herbicides at rates and over widths specified below respecting weather restrictions; and,</li> <li>• Re-entry times to treated areas follow label's instructions unless personal protective equipment is worn according to label's instructions.</li> </ul>
(iv) procedures for the safe disposal of empty pesticide containers and unused pesticides;	<p>Minimum specifications for safe disposal of pesticides for use on CN property are as follows:</p> <ul style="list-style-type: none"> <li>• Used lubricants, rinse water, empty herbicide containers, unused or partially used materials or chemicals and any other type of waste generated are disposed of in accordance with applicable law and industry standards and not within CN property</li> </ul>
(v) procedures for responding to pesticide spills;	<p>CN requires that its applicators shall ensure any spill response shall meet or exceed the following minimum requirements:</p>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
	<ul style="list-style-type: none"> <li>• Immediately report to CN Police by calling 1.800.465.9239;</li> <li>• Ensure protective clothing and safety gear is worn as per label instructions for protection from pesticide contamination;</li> <li>• Ensure that the spill is contained using soil ridges, dams or other spill response supplies available and if possible, stop the source of the spill;</li> <li>• Cease all other operations until the source is contained;</li> <li>• If applicable, spread absorbent material over the spill to absorb any liquid;</li> <li>• Place all collected material into garbage bags or containers, with the contents clearly marked;</li> <li>• Remove all soil or other material contaminated from the spill from the site and placed in garbage bags or containers;</li> <li>• Ensure that the project supervisor provides notification of, and report all details to, the CN contract representatives.</li> </ul>
<p>s.58 (3) (b) a description of the environmental protection strategies and procedures that will be followed under the plan, including a description of the following strategies and procedures:</p> <p>(i) strategies to protect community watersheds and other domestic and agricultural water sources from adverse effects of pesticide use;</p>	<p>CN and its active rights-of-way are federally regulated.</p> <p>CN requires that its applicators shall comply with applicable federal laws and regulations governing pesticide application on CN's active railway property. Specifically, applicators must use, handle, transport, store and dispose of a pesticide as required by the <i>Pest Control Products Act</i>, S.C. 2002, c. 28 ("PCPA") and as specified on the label of the pesticide container, or in the manufacturer's instructions that accompany the pesticide. Applicators are responsible to ensure that pesticide applications are carried out in accordance with all legal requirements and that the product label setbacks are followed and respected during all pesticide applications.</p>
<p>(ii) strategies to protect fish and wildlife, riparian areas and wildlife habitat from adverse effects of pesticide use;</p>	<p>See above.</p>
<p>(iii) strategies to prevent pesticide contamination of food intended for human consumption;</p>	<p>While CN takes measures to ensure that chemical application is done in a way to minimize impacts off of CN property, and while non-chemical methods of vegetation management shall be considered where treatment objectives can be achieved, the onus is on organic farmers to ensure that there is an adequate buffer zone between their farm and the CN property.</p> <p>Trespassing on CN property is prohibited in all locations, and CN actively discourages trespassers who access the right-of-way for berry picking and any other harvesting activities.</p>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
(iv) pre-treatment inspection procedures for identifying treatment area boundaries;	See above: CN's pesticide applicator is given a list of all known culvert and bridge locations within the proposed treatment area, in addition to any other CN supplied sensitive no spray areas and is required to familiarize themselves with this information. CN requires that all onsite applicators review this information and are familiar with the treatment area and any additional locations where setbacks are required. Applicators must tour the proposed mileage locations proposed for pesticide application ahead of time, to identify and mark with flagging or spray paint, the setback areas as stipulated on the pesticide and adjuvant labels. Alternatively, the certified applicator is required ride ahead of the spray truck in the flagging support vehicle, calling out the setbacks and sensitive no spray areas to applicators.
(v) procedures for maintaining and calibrating pesticide application equipment;	CN requires that its applicators conduct and document pre-treatment equipment inspections and shall ensure that all equipment is in good working order. Further, CN requires that its applicators provide accurate application rate monitoring equipment on all application equipment and not to operate any equipment with faulty application rate monitoring until it has been repaired.
(vi) procedures for monitoring weather conditions and strategies for modifying pesticide application methods for different weather conditions;	<p>CN requires that its applicators monitor and record weather information prior to and during pesticide treatments as conditions change. The following weather information will be recorded at least twice a day:</p> <ul style="list-style-type: none"> <li>• Wind speed and direction;</li> <li>• Precipitation;</li> <li>• Temperature; and</li> <li>• Sky Condition (e.g. cloudy, partial cloud cover, full sun).</li> </ul> <p>Applications of pesticides will be suspended if:</p> <ul style="list-style-type: none"> <li>• The maximum application temperature on the pesticide label is exceeded;</li> <li>• Ballast is frozen or saturated;</li> <li>• Wind speed and/or wind direction will potentially cause product drift outside of permitted application areas;</li> <li>• The application is a residual pesticide on water saturated soil, in heavy rainfall or imminent heavy rainfall (rainfall greater than 1 mm per hour during and for 24 hours after an application i.e. 2.4 cm over 24-hour period); or</li> <li>• Foliage is wet or covered by frost or ice.</li> </ul>

s.58 Integrated Vegetation Management Act Regulation – Required Content for Pest Management Plan	CN Pest Management Activities
s.58 (3) (c) identification of each pesticide that will be used under the plan, the manner of its application and the type of equipment required for each manner of application.	CN requires that is applicators only use pesticides that have are regulated and have been registered for use under the PCPA. The list below covers the pesticides that CN may use for its vegetation control activities. CN reserves the right to utilize any and all of the available products (i.e. Trade Names) for the below listed active ingredients provided that they are registered for the intended purpose under the PCPA.

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**Table 1: Pesticides Used for CN's Pest Management Activities**

Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>aminocyclopyrachlor</b></p>	<p>Is a selective, low-toxicity residual herbicide that provides pre- and post-emergent control of broadleaf weeds, woody species, vines and grasses on several non-food use sites, such as rights of way, wildlife management areas, recreational areas, turf/lawns, golf courses and sod farms. The chemical is a systemic herbicide and acts by disrupting gene expression. This causes undifferentiated cell division and elongation.</p> <p><b>Where and How Used: Foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>aminopyralid</b></p>	<p>Is a selective, residual herbicide, giving season-long control of broadleaf weeds and woody plants when used at label application rates. It is useful for spot treatment control or suppression of many invasive plant species, including biennial and perennial thistles, knapweeds, yellow starthistle, scentless chamomile and common tansy. It is effective only on actively growing plants. It is safe to desirable grasses, and its systemic and residual properties effectively control invasive plants at multiple growth stages.</p> <p><b>Where and How Used: Foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>bromacil</b></p>	<p>Is a non-selective, residual, herbicide that is useful for managing brush and broadleaf weeds. It is particularly effective in controlling perennial grasses. It works primarily through the roots, and requires moisture for activation.</p> <p><b>Where and How Used: Soil; pre-emergent and post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> </ul>

Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>chlorsulfuron</b></p>	<p>Is a selective, residual herbicide used for the control of hard to manage annual and perennial broadleaf weeds by both foliage and root uptake. Its primary use is for the spot-treatment of horsetail, as well as other established species not controlled by other herbicides.</p> <p><b>Where and How Used: Foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>clopyralid</b></p>	<p>Is a selective, residual, post-emergent herbicide that is useful for the control of many broadleaf species of noxious weed and invasive plants. It does not affect many woody species such as trees and shrubs. It can be used in areas where the over story of trees and shrubs is present at the infestation site, and there is a need to minimize or prevent damage to these non-target plants.</p> <p><b>Where and How Used: foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>chloropicrin</b></p>	<p>Is a non-selective herbicide used for anti-fungal and anti-microbial treatment of bridge timbers, piles and wood structures against rot. This fumigant is delivered in capsules cored into the wood structures and is useful in increasing the longevity of wood structures.</p> <p><b>Where and How Used: Implanted into timber structures being treated</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> </ul>

Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>dicamba</b></p>	<p>Is a selective, non-residual herbicide used for the spot treatment of young, actively growing broadleaf weeds and brush species. Will control many broadleaf herbaceous species that cannot be effectively treated using physical controls or glyphosate applications. Because it is a selective herbicide, it is useful in areas where grasses are to be retained on the site.</p> <p><b>Where and How Used: foliage; post-emergent, stem and stump treatments</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>diuron</b></p>	<p>Is a non-selective, residual herbicide used to control many annual and perennial grasses and herbaceous weeds. Is useful in preventing the germination and growth of weed seedlings when applied to the soil. Diuron requires moisture (minimum 12 mm) to move it into the root zone. As a result of the moisture requirement for activation, the effects on weeds are slow to appear and will not become apparent until the diuron has been absorbed into the plant and leaves.</p> <p><b>Where and How Used: soil; pre-emergent and post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> </ul>
<p><b>flumioxazin</b></p>	<p>Is a residual, non-selective herbicide used to control many annual and perennial grasses and herbaceous weeds. Is useful in preventing the germination and growth of weed seedlings when applied to the soil. Flumioxazin requires moisture to move it into the root zone. As a result of the moisture requirement for activation, the effects on weeds are slow to appear and will not become apparent until the diuron has been absorbed into the plant and leaves. Dry weather following application may reduce its effectiveness.</p> <p><b>Where and How Used: soil; pre-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>

Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>glyphosate</b></p>	<p>Is a non-selective, non-residual herbicide used to control a very large number of herbaceous broadleaf and grass species and species of woody vegetation. It is only effective for treating weeds that have germinated, emerged above the soil, and are actively growing at the time of spraying. It is most useful in areas where low soil residual is required because of the close proximity of wells, water bodies and other environmentally sensitive features. It can be applied to cut trees, shrubs or young seedlings that emerge following manual treatments, or where physical control methods are not effectively controlling vegetation.</p> <p><b>Where and How Used: foliage; post-emergent, stem and stump treatments</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> <li>• Danger Trees</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>imazapyr</b></p>	<p>Is a residual, non-selective, pre-emergent and post-emergent herbicide used to control broadleaf vegetation, annual and perennial grass species and woody vegetation (especially maple), including vines and many deciduous species. It works by preventing germination of seeds. It is readily absorbed through foliage and roots and moves rapidly throughout the plant, where it breaks down tissue. It is particularly useful in controlling vegetation that has not been effectively managed using a combination of physical controls and glyphosate application. Treated plants stop growing soon after spray application. It can be applied to foliage, or as a basal, cut stump, or injection treatment.</p> <p><b>Where and How Used: soil and foliage; pre-emergent and post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> </ul>



Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>metsulfuron-methyl</b></p>	<p>Is a translocated, non-selective herbicide of moderate persistence used for invasive plant control in non-crop areas. It is applied as a foliar spray. It rapidly inhibits the growth of susceptible plants, but typical symptoms (discolouration) may not be noticeable for several weeks after application, depending on growing conditions and plant susceptibility. Warm, moist conditions following application promote its activity while dry, cold conditions may reduce or delay activity. Invasive plants hardened off by cold weather or drought stress may not be controlled. Degree of control and duration of effect are dependent on the application rate used, sensitivity and size of the target species, as well as soil moisture and soil temperature. Invasive plants controlled include common tansy, kochia, scentless chamomile, Canada thistle and sow thistle.</p> <p><b>Where and How Used: foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>picloram</b></p>	<p>Is a selective, residual, systemic herbicide used for the control of a wide variety of invasive plant species. Grasses are quite tolerant. It can remain in the soil for several years and continue to control susceptible weeds. Due to its persistence in the soil, care must be taken to avoid areas where soil may be moved or where there are shallow aquifers or domestic water intakes. The mode of action and persistence allow for a broader application window. Picloram is absorbed by foliage and roots and translocated. It acts as a growth regulator, somewhat more active than, but similar to 2,4-D.</p> <p><b>Where and How Used: foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>

Active Ingredient	Properties & Use Patterns	Purpose & Areas Used
<p><b>pyroxasulfone</b></p>	<p>Is a non-selective, residual herbicide, giving season long control of grass and broadleaf weeds as well as an additional mode of action to assist in the control of acetolactate synthase resistant weeds in fallow land when used at label application rates. It can be used to maintain bare ground that must be kept weed free. Moisture is necessary to activate pyroxasulfone in soil for residual weed control.</p> <p><b>Where and How Used: Soil and foliage; pre-emergent and post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>triclopyr</b></p>	<p>Is a selective, post-emergent, residual herbicide used to control established perennial weed and brush species. It is applied as either a foliar application or applied to cut stumps or stems of deciduous trees to inhibit re-sprouting following cutting. It is absorbed by both leaves and roots and readily moves throughout the plant.</p> <p><b>Where and How Used: foliage; post-emergent, stem and stump treatments</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Maintain Sight Line Requirements</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>
<p><b>2,4-D</b></p>	<p>Is a selective, non-residual, post-emergent herbicide that is effective for the control of a wide range of broadleaf weeds and woody plants, and some species of noxious weeds and invasive plant species. For woody plants, it is most effective when applied to foliage and stems just prior to or after full leaf in late spring or early summer. Is also effective for woody plant control when applied as a basal bark or cut surface treatment (e.g.. by wick application).</p> <p><b>Where and How Used: foliage; post-emergent</b></p>	<ul style="list-style-type: none"> <li>• Ballast</li> <li>• Station Grounds</li> <li>• Yards, Crossings</li> <li>• Bridges</li> <li>• Around Shops</li> <li>• Material Storage Areas</li> <li>• Buildings</li> <li>• Rights-of-Way</li> <li>• Maintain Sight Line Requirements</li> <li>• Noxious Weeds and Invasive Plants</li> </ul>