

Pest Management Plan (DRAFT)

Teck Coal Ltd.

PMP Confirmation # TBD

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Version 1.0

The Teck logo is located in the bottom right corner of the page. It consists of the word "Teck" in a bold, blue, sans-serif font. The background of the page features a large, dark blue geometric shape on the left side, which is a right-angled triangle with its hypotenuse on the right side, pointing towards the bottom right corner.

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Version History

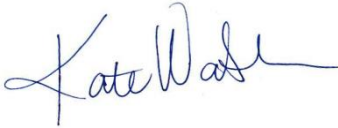

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1.0	March 2023	Draft Plan sent for public and First Nation consultation	KNC, Yađit ʔa·knuqłi 'it

Note: MOECCS – Ministry of Environment and Climate Change Strategy, KNC – Ktunaxa Nation Council

Consultation History

Version	Consultation Period	Summary of Consultation
1.0	March-April 2023	Public Consultation
1.0	March-April 2023	First Nations Notification (KNC - Ktunaxa Nation Council), Yađit ʔa·knuqłi 'it

Prepared by

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1 Introduction

Teck has prepared a Pest Management Plan (PMP) for the management and control of invasive plants and noxious weeds associated with public land (i.e., provincial crown land) in and around operations within the Elk Valley. Teck proposes to annually control invasive plants and noxious weeds on more than 50 hectares of public land including the management of vegetation on railway right-of-ways, and industrial sites. This PMP has been prepared in accordance with the Integrated Pest Management Act (IPMA) (Province of British Columbia, 2003) and Section 58 of the BC Integrated Pest Management Regulation (IPMR) (Province of British Columbia, 2016).

1.1 Teck Background

Teck is one of Canada's leading mining companies committed to responsible mining and mineral development with major business units focused on copper, zinc and steelmaking coal, as well as investments in energy assets. Teck Coal operates four steelmaking coal operations located in the Elk Valley of British Columbia.

1.2 Environment, Health and Safety Policies and Procedures

Teck is committed to high environmental performance and continual improvement of operations within the Elk Valley through adherence to relevant legislation, on-going monitoring, and application of safe and effective treatments. This PMP complies with Teck Environment, Health, and Safety Policies and aims to maintain the health and safety of all Teck employees and contractors, as well as protect the environment. All persons involved with pest management will adhere to the procedures and specifications outlined in this PMP.

1.3 Purpose

Teck is required to fulfill the following legal obligations, for which this PMP will address:

- Control the spread of weeds designated as “noxious” under the BC Weed Control Act (Province of British Columbia, 1996).
- Manage vegetation on railways under Railway Safety Act and Transport Canada's Rules Respecting Track Safety (Transport Canada, 2021) .
- Manage vegetation within electrical substations under the North American Electric Reliability Corporation (NERC) standard FAC-003-3 or subsequent versions, Transmission Vegetation Management for safety and structural compliance (North American Electric Reliability Corporation, 2014).

The purpose of this PMP is to outline the guidance and regulations for the management of noxious weeds and invasive plants, as well as vegetation on railways and within industrial areas as described as follows in Part 1, Division 5, Section 24 of the BC Integrated Pest Management Regulation (IPMR) (Province of British Columbia, 2016):

- Section 24 (2) (g) the management of noxious weeds or invasive plants on more than 50 ha per year of public land managed by a single entity;
- Section 24 (2) (a) the management of vegetation on more than 20 ha per year of public or private land that is

- (i) used as a railway right of way, yard or associated signal or communication facility, and
- (ii) managed by a single entity;
- Section 24 (f) the management of vegetation on more than 20 ha per year of public land that is
 - (i) used as an industrial site, other than an industrial site described in paragraph (a)(i) or (b)(i),
 - and
 - (ii) managed by a single entity.

1.4 Goals & Objectives

The overall goal of this PMP is to use best management practices for the safe, effective control of noxious and invasive weeds and industrial vegetation within Teck operations.

The objectives of this PMP are as follows:

- Reduce invasive plant spread and mitigate their impacts within mining areas, reclaimed land, productive ecosystems, and wildlife habitat.
- Manage invasive plants with the goal of containment, reduction, and eradication of populations.
- Use integrated management techniques to reduce the use of herbicide in the long term.
- Manage vegetation in and around railways and facilities that comply with federal and provincial requirements.
- Manage invasive plants and vegetation to allow for safe work environments and protection of the environment.
- Reduce long-term program costs.

1.5 Scope and Scale

Teck will use the principles of Integrated Pest Management (IPM) to manage pests. The vegetation management practices described in this PMP include chemical (herbicide) control. All vegetation management activities shall be conducted in a manner that complies with this PMP. This PMP is the legal authority for Teck to use herbicides on the areas defined below.

The areas where Teck conducts management activities outlined in this PMP are defined as the following, and can be referenced in Appendix I Teck PMP Area Overview Maps:

- Mine permitted public lands - public (Crown) lands within the permitted active disturbance boundary of Teck's operations (i.e., industrial sites)
- Coal tenure licenced public land - which includes areas on public (Crown) lands where exploration activities exist outside of the disturbance boundary of Teck's operations (i.e., exploration roads and trails).
- Teck private lands - specifically for railway or industrial vegetation management on railway right-of-ways, yards or associated signal or communication facilities.

Teck holds multiple private land parcels in the Elk and Flathead Valleys, as such the management of invasive plants and noxious weeds on these private lands will follow the guidance of the internal Teck Regional Invasive Plant Management Plan (IPMP) (Teck Coal Limited a., 2022).

1.6 Geographic Boundaries

The geographic boundaries of this PMP include all areas listed in the Section 1.5; mine permitted public lands, coal tenure licenced public lands and Teck private lands, see Appendix I for the Teck PMP Area Overview Maps. Specific areas are listed in Table 1 below.

Table 1. Geographic Areas and PMP Applicable Category

Mine Operations	Proximity to Communities	PMP Applicable Area	PMP Applicable Category		
			Noxious Weeds and Invasive Plant Management	Vegetation Management on Railway	Vegetation Management on Industrial Sites
Fording River Operations (FRO)	31km northeast of Elkford	Coal tenure licensed public land	Yes	Yes	Yes
Greenhills Operations (GHO)	14km northeast of Elkford	Private land	No	Yes	No
Line Creek Operations (LCO)	22km north of Sparwood	Coal tenure licensed public land and Private land	Yes	Yes	Yes
Elkview Operations (EVO)	Adjacent to Sparwood	Private land	No	Yes	No
Coal Mountain mine (CMm)	36km southeast of Sparwood	Coal tenure licensed public land and Private land	Yes	Yes	Yes

Site Operational Plans are created annually for all operations and projects pertaining to all Teck invasive plant, noxious weed and vegetation management, these areas fall within the geographic boundaries shown on the Teck PMP Area Overview Maps (Appendix I). Site Operational Plan maps are developed annually and include more details on specific treatment areas, these maps will be provided with the annual Notice of Intent to Treat.

1.7 Term of the Plan

This plan shall be in effect for a five-year period from May 2023 to May 2028.

1.8 Contact Information

The person responsible for coordinating the management of invasive plants under this PMP, and the principal contact for information related to this plan is:

Tracy Kaisner
Program Administrator
421 Pine Ave.
Sparwood BC V0B 2G0

Kate Walsh
Teck Contract Manager
421 Pine Ave.
Sparwood BC V0B 2G0

2 Program Rationale

2.1 Invasive Plant and Noxious Weed Management

Invasive plants, including noxious weeds have the capacity to establish quickly and easily on both disturbed and un-disturbed sites, and can cause widespread negative economic, social, and environmental impacts. Invasive plants threaten the natural environment and are recognized globally as the second greatest threat to biodiversity. These threats are those invasive plant species that will be addressed by this PMP.

For the purposes of this PMP, the following definitions apply:

Invasive plant - species that are non-native to the ecosystem under consideration, and whose introduction and spread causes, or is likely to cause, economic or environmental damage, or harm to human health. In B.C. the term invasive plant is synonymous with invasive alien plant. Invasive plants regulated under the Forest and Range Practices Act (Province of British Columbia, 2002) are included in this definition.

Noxious weed – invasive plant species regulated under the BC Weed Control Act (Province of British Columbia, 1996).

In the context of this PMP, the term “invasive plant” will be used to include both invasive plants and noxious weeds.

2.2 Industrial Vegetation Management

Vegetation management may be required on railway track ballast, right-of-way areas, yards, as well as, general buildings, and material and equipment storage areas. Electrical substations are facilities that receive high voltage electricity from transmission lines and reduce the voltage to an appropriate level for delivery to operations on site and must also be kept free of vegetation.

There are several associated risks with vegetation in these areas that will be managed under this PMP:

Structural Integrity

Total vegetation control in the railway ballast section is required, as unwanted vegetation negatively affects the structural integrity of the railway bed. Proper drainage of the ballast section is critical for a stable track structure. Vegetation within the track ballast reduces drainage by retaining fine particles such as silt or clays and increases organic matter, these soils begin to accumulate and further reduce drainage of water, leading to additional growth of vegetation and decreased ballast integrity.

When the ballast's ability to support the weight of trains is reduced the result is problems with track support, alignment and profile that are potential causes of train derailments. Vegetation growing in ditches at the ballast shoulder can impede proper drainage and contribute to flooding or washout of the track structure and surrounding areas. Excessive moisture will also contribute to the premature deterioration of rail ties and track hardware, the failure of which may also result in a train derailment.

Safety Inspections

It is imperative that maintenance personnel can effectively inspect railways, bridges, and substation structures. The presence of vegetation can significantly impair proper inspections.

Hazards to the Public

There are many possible sources of ignition in railway operations including sparks from brakes, diesel engines, wheels, overheated bearings, and operation of rail-grinding equipment. Sources of ignition, combined with dry brush and weeds in hot dry conditions, are a fire hazard, with potential to harm the public or damage buildings, property, or the environment.

Hazards to Employees

The presence of vegetation can be hazardous to employees, whether along the railway or inside substations. Vegetative growth can impede movement, cause slippery conditions, and create tripping hazards for employees. Excessive vegetation may also obscure tripping hazards such as equipment, uneven ground, or holes.

Damage to Railway Equipment

The presence of vegetation exceeding the height of the rail may cause wet, slippery conditions, which can affect traction and braking of locomotives and equipment. This can result in damage to track and equipment components.

Fire Hazard

The growth of vegetation within electrical substation compounds can present a significant fire hazard risk. If an electrical fault or lightning strike occurs, current flows through the structure and into the ground. Weeds can conduct electricity, putting workers at risk of electrocution through "step and touch" potential. These current flows can also be transferred outside the facility, thereby putting the public at risk.

3 Integrated Pest Management

3.1 Prevention

Preventing the spread of weeds is the most important strategy, it involves an active awareness of all activities that have the potential to spread and establish weeds in new locations. There are numerous ways that seeds can travel and spread very easily; they thrive in disturbed or degraded soil; therefore, prevention is about interrupting this succession.

Methods of seed travel and spread have been identified on Teck properties and methods of mitigation will be implemented to reduce the spread and introduction of invasive plants. These prevention methods include:

- Minimizing unnecessary soil disturbance, especially close to areas with identified infestations, as to prevent new infestations from establishing.
- Monitoring and tracking areas of disturbance (including exploration roads, drill sites, soil salvage areas, newly constructed roads, and reclamation areas) and conducting inventory on these areas as per the frequency identified in the priority matrices in Section 3.2.1 to identify invasive plants.
- Use certified weed-free nursery stock or seed mixture to prevent the importation of invasive seeds to reclamation planting and seeding areas, or disturbed sites.
- An ongoing extensive planting and seeding program for reclamation areas is implemented under the Reclamation and Closure Plan.
- Supplemental seeding of areas identified as invasive plant sites where bare soils exist to promote the regeneration of native species and provide competition for invasive species.
- Implement practices of inspecting and cleaning equipment and vehicles after driving through and working in areas infested with invasive plants, prior to moving to different work locations. This includes an inspection of vehicles to ensure weed materials have not been caught in the undercarriage.
- Maintaining equipment yards and laydown areas to be free of invasive plants.
- Programs such as Terrestrial Ecosystem Mapping (TEM) are in place for species inventories and identification of key native plant or rare species for protection and enhancement.
- An extensive invasive plant monitoring program is in place to prioritize, and survey identified invasive plant sites to determine actions required. This monitoring program is outlined in Section 3.3 of this PMP (Inventory and Monitoring).
- A segment on education and awareness of invasive plants is provided to all staff and contractors accessing mine sites as part of the required annual online orientation for each mine site.

3.2 Identification and Control Thresholds

Identification of invasive plants is the key to determining the appropriate management action.

3.2.1 INVASIVE PLANTS AND NOXIOUS WEEDS PRIORITY MATRIX

The Teck Regional Invasive Plant Management Plan outlines a priority matrix used to determine management actions for invasive plants on all Teck properties and has been included below. When invasive plants or noxious weeds can be widespread or well established, it may be difficult to eliminate

them all within available operational budgets. This priority matrix outlines the how the injury thresholds are determined and what level of control will be applied.

The priority ranking matrix is intended to assess the threat posed by infestations by considering the species characteristics, the nature and location of the infestation, and its risk to Ecosystem and Biodiversity Elements (EBE). These priorities are reviewed annually from the previous year's treatment and monitoring program and guides treatments for the successive year's Site Operational Plan. Invasive plant and site prioritization are based on similar criteria implemented in the East Kootenay Invasive Species Council's (EKISC) Strategic Plan (East Kootenay Invasive Species Council, 2013). Additionally, by Teck where a particular concern has been identified to protect an EBE. The Teck Invasive Plant Species Priority List is updated annually and included as part of each site's Annual Site Operational Plan. Species that are found and not currently on the list will be added as part of the annual update. The 2022 Species List is shown in Table 2.

Table 2. Teck Invasive Plant Species Priority List 2022

Priority 1		
Common Name	Latin Name	Abbreviation
Baby's Breath	<i>Gypsophila paniculata</i>	BY
Common Tansy	<i>Tanacetum vulgare</i>	TC
Cypress Spurge	<i>Euphorbia cyparissias</i>	CS
Orange Hawkweed	<i>Hieracium aurantiacum</i>	OH
Blueweed	<i>Echium vulgare</i>	BW
Caraway	<i>Carum carvi</i>	CA
Nodding Thistle	<i>Carduus nutans</i>	NT
Japanese Knotweed ¹	<i>Fallopia Japonica</i>	JK
Flat Peavine ¹	<i>Lathyrus sylvestris</i>	FP
Leafy Spurge ¹	<i>Euphorbia esula</i>	LS
Rush Skeletonweed ¹	<i>Chondrilla juncea</i>	RS
St. John's Wort	<i>Hypericum perforatum</i>	SJ
Hoary Alyssum	<i>Berteroa incana</i>	HA
Meadow knapweed	<i>Centaurea debeauxii</i>	MK
Priority 2		
Diffuse Knapweed	<i>Centaurea diffusa</i>	DK
Spotted Knapweed	<i>Centaurea biebersteinii</i>	SK
Dalmatian Toadflax	<i>Linaria dalmatica</i>	DT
Scentless Chamomile	<i>Matricaria maritima</i>	SH
Wormwood	<i>Artemisia absinthium</i>	WW
Sulphur Cinquefoil	<i>Potentilla recta</i>	SC
Yellow Hawkweed spp.	<i>Hieracium pratense</i>	YH
Hound's Tongue	<i>Cynoglossum officinale</i>	HT
Cheatgrass/Downy Brome	<i>Bromus tectorum</i>	DB
Priority 3		
Common Toadflax	<i>Linaria vulgaris</i>	YT
Burdock	<i>Arctium spp.</i>	BU
Canada Thistle	<i>Cirsium arvense</i>	CT
Bull Thistle	<i>Cirsium vulgare</i>	BT
Mullein	<i>Verbascum thapsis</i>	MU
Annual Sowthistle	<i>Sonchus oleraceus</i>	AS
Perennial Sowthistle	<i>Sonchus arvensis</i>	PS
Chicory	<i>Chicorium intybus</i>	CY
Bladder Campion	<i>Silene vulgaris</i>	BC
Curled Dock	<i>Rumex crispus</i>	CD
Oxeye Daisy	<i>Leucanthemum vulgare</i>	OD
Bluebur	<i>Lappula echinata</i>	LE
Meadow Goat's Beard	<i>Tragopogon pratensis</i>	MG
Western Goat's Beard	<i>Tragopogon dubius</i>	WG

¹ Not currently found on Teck property but are found in rare distribution in the Elk Valley or Flathead Valley and targeted for mandatory control by EKISC.

Common Names, Latin Names and Abbreviations are as per the Invasive Alien Plant Program Plant List Abbreviations and Latin Names (Invasive Species Council of BC)

- **Priority 1 species** have limited or no current distribution on Teck properties and will be targeted for annual control/eradication when identified.
- **Priority 2 species** are found in varying distributions on Teck properties and will be prioritized for containment based on site-specific risk factors when identified.
- **Priority 3 species** may be wide-spread and beyond landscape-level control and/or have relatively low impact or invasiveness. Control of these species will be prioritized based on site-specific risk factors when identified. Some of these species have biological control agents available.

EKISC also maintains a watch list of invasive species that are not currently known to exist in the East Kootenay region and will be targeted by Teck as Early Detection Rapid Response (EDRR) mandatory control if found. If these species are identified, they will be added to the P1 species list.

Table 33 indicates characteristics the Qualified Professional (QP) or invasive plant contractor will take into consideration to determine the site risk.

Table 3. Invasive Plant Site Risk Characteristics

Site Risk	Characteristics	Examples
High Risk 1	<ul style="list-style-type: none"> • Small infestations with an approximate size of 0.1ha or less • Highly susceptible areas, risk to EBE • Isolated sites • Close proximity to areas free of invasive plants • High probability of control or eradication • Newly disturbed sites 	<ul style="list-style-type: none"> • Small infestations on active exploration trails or reclamation areas • Infestations in immediate proximity to high traffic vectors such as roads, landings, parking lots, streams, rivers • Active gravel pits • Soil stockpiles • Soil placement areas identified as susceptible
Moderate Risk 2	<ul style="list-style-type: none"> • Areas with an approximate size between 0.1ha to 0.5ha (medium) • In the vicinity of other infestations, but may be putting values at risk • May have limited access • Good probability of control 	<ul style="list-style-type: none"> • Medium-sized infestations on exploration trails with low activity • Infestations found beyond the immediate roadside or waterbody • Infestations in moderate traffic areas, low-activity roads, camping areas • Newly cleared areas (e.g., cut blocks)
Low Risk 3	<ul style="list-style-type: none"> • Areas with an approximate size greater than 0.5ha • Adjacent to other large infestations • Large infestations with little or no access • Low susceptible risk, little or no risk to EBE • Low probability of control • Potential for biocontrol 	<ul style="list-style-type: none"> • Areas that are not normally accessed (reclaimed trails) • Non-active/reclaimed gravel pits • Regenerated cut blocks where overstory is expected to shade out invasive plants

Other factors may be considered when determining site priority. These factors are dependent on location and their influence may become more significant and codependent when a QP is considering prioritizing a site. Examples include:

- Accessibility
- Feasibility of control

- Adjacent private properties/Crown land
- Ecological value
- Community/cultural value
- Recreational value
- Historical value

The final component to establishing priorities is the site and species combination matrix, as outlined below in Table 4.

Table 4. Site and Species Threshold Priority Matrix

Site Risk	Invasive Plant Species Priority		
	1	2	3
1	P1	P1	P1-P2
2	P1	P2	P2-P3
3	P1-P2	P2-P3	P3

As the environmental site risk decreases and the risk of species impact decreases, the management strategy will become less aggressive as the demand to control the species decreases. Table 5 identifies the specific management objective for each site priority.

Table 5. Threshold Priority Management Objectives

Site Priority	Management Objective
P1	Targeted for annual treatment/eradication
P2	Targeted for containment if opportunities exist in the annual Site Operational Plan, monitor biennially (i.e., once every two years)
P3	Monitor triennially (i.e., once every three years)

Priority 1 Sites

The management objective for Priority 1 sites is to eradicate small infestations, to identify and monitor polygon size, and reduce the total area of large infestations. The aim for Priority 1 sites is to receive a treatment annually. Prioritizing a site as P1 may be based solely on the species present or site risk, regardless of site location or characteristics. The objective is to treat all species at P1 sites.

Priority 2 Sites

The management objective for Priority 2 sites is to survey them biennially and treat if opportunities exist within the yearly operational plan, once all P1 sites have been treated. Treatment on these areas depends on resources, budget, and weather conditions encountered each operating year. The objective is to treat all species at P2 sites, at the discretion of the Qualified Professional (QP).

Priority 3 Sites

The management objective for Priority 3 areas is to survey them triennially and treat if opportunities exist within the yearly operational plan, or to determine if the current injury threshold for treatment is stable or has been exceeded and whether an upgrade in priority ranking is warranted (i.e., species distribution and/or density has increased and may be threatening adjacent areas). This monitoring will allow for periodic assessment by a QP to determine if target species pose specific environmental, health, or economic threats.

At the discretion of a QP, the hierarchy and ranking for treatment areas can be altered in the field if site conditions dictate. Clear rationale and decision-making process will be documented and submitted with the treatment records.

3.2.2 INDUSTRIAL VEGETATION MANAGEMENT CONTROL THRESHOLDS

In areas where vegetation is considered a safety or structural hazard (electrical substations, rail ballasts, railway yards and other industrial facilities), the identification of vegetation will include all grasses, herbaceous and woody plants. The presence of vegetation will trigger management to a priority level of total control. The following Table 6 outlines guidelines for control thresholds for percent vegetation cover on railways, substations, and general industrial areas.

Table 6. Industrial Vegetation Management Injury Thresholds

Area for control	Treatment Threshold	Explanation
Electrical substations	0% cover	<ul style="list-style-type: none"> To preserve the structural integrity and safety of the substations, the threshold for treatment will be zero. Therefore, all vegetation present inside the substation or within one meter of the compound will require control. Management to maintain sites in a near vegetation-free state (to reduce fire or safety hazards) in areas with no access by unauthorized people.
Rail Ballast	3-10% cover	<ul style="list-style-type: none"> To preserve the structural integrity and safety of the rail ballast, the threshold for treatment will be low, and will be dependent upon the priority of the area: <ul style="list-style-type: none"> High priority areas will include active rail lines, rail loops and sidings, the threshold of these areas will be 3% cover. Low priority areas will include non-active rail lines, rail loops and sidings. The treatment threshold on these areas will be between 3-10% cover.
Rail right-of-way (outside the ballast)	20% brush cover, or vegetation over 1.2 meters in height	<ul style="list-style-type: none"> The treatment threshold on the right of way (inner and outer) will be highly variable and may include spot treatment of selected trees and shrubs in priority areas where sightlines need to be maintained, or noxious/invasive weeds are present.

Industrial Vegetation (general)	0-10% cover, or vegetation exceeding an unacceptable height	<ul style="list-style-type: none"> • Vegetation will be treated in areas where it is considered a risk to structural integrity or safety. • Equipment laydown areas and yards where materials and equipment are being moved around frequently will be a high priority for the removal and control of vegetation as to prevent it from becoming established and impeding equipment operation or sightlines for work safety, and also to prevent the spread of any noxious or invasive weeds. • Buildings – the threshold for treatment around buildings will be variable and dependent upon the purpose and level of use. • Parking areas will be a high priority with a low threshold to avoid the spread of weeds. • Management to maintain sites in a near vegetation-free state (to reduce fire or safety hazards) in areas with no access by unauthorized people.
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3.3 Inventory and Monitoring

Broad-scale site inventories were conducted at all Teck Elk Valley Operations and private lands in 2018 and 2019. This inventory established the baseline for all invasive plant management actions at a frequency defined by the area's assigned priority ranking, as follows:

- Surveys of all P1 sites will occur annually.
- Survey of P2 sites will occur biennially (every two years).
- Survey of P3 sites will occur triennially (every three years).

These site priorities will be reassessed by the project manager and if necessary, adjusted to reflect current conditions. New areas of interest will continue to be identified and inventoried each year as part of the ongoing monitoring program.

Ongoing inventory will be accomplished through the following approach:

- At the beginning of the growing season qualified contractors will be retained to carry out the invasive plant and vegetation management program. Activities include surveys and treatment of invasive species based on the priority ranking determined from previous inventory, monitoring, and treatment data and as per the annual Site Operational Plan.
- Surveys of industrial areas, substations and railways will occur annually.
- All reports of occurrences of invasive species from site staff, contractors and public will be included in the monitoring program.
- Teck will maintain an internal database that documents the treatment and survey of invasive plants.
- Surveys are not weather dependent and can be conducted during conditions that would be considered unsuitable for chemical treatments, (i.e., precipitation and wind), provided visibility is

adequate. Surveys must be conducted during the growing season and ideally when plants are most visible to increase effectiveness of survey (i.e., pre-flowering, flowering, or post flowering/seed stage).

- Any plant species that cannot be identified will be sampled and sealed in a paper bag or documented as a photo for verification purposes.
- Prior to leaving an infested site, the contractor will check all clothing and equipment for invasive plant fragments, to avoid spread to other areas. Contractor must record this as part of daily pre-work meetings or when leaving a site.
- Surveys will be conducted as specified in the Teck Inventory Survey Protocol (Teck Coal Limited b., 2022) using the data fields as per the Invasive Alien Plant Program Reference Guide standards (Ministry of Forests and Range, 2010), as well as additional productivity fields:
 - Region
 - Date
 - Location
 - Photos
 - Species, Distribution and Density
 - Slope, Soil Texture
 - Treatment Priority
 - Proposed Activity
 - Estimated Treatment Time
 - Comments
 - Surveyors, & Company

3.4 Treatment Method Selection

A variety of treatment options are available for the control of invasive plants and general vegetation; this integrated PMP incorporates the use all control methods, selecting the most suitable methods based on site characteristics. Substituting biological, physical, or cultural controls for chemicals is promoted wherever feasible to reduce impacts on the environment, if these non-chemical alternatives have lower potential environmental impacts. When pesticides are used, a thorough understanding of all methods, limiting factors, safety and the environment is paramount.

3.4.1 CULTURAL CONTROL

Cultural control includes seeding, irrigating, or fertilizing to encourage the establishment of healthy ground cover to resist invasive plants. When natural vegetation or soil is disturbed, cultural control can be an effective tool in invasive plant management. Seeded or intensively managed plant communities can offer competition for invasive plants. Where non-selective herbicides are used, control of present invasive plants will leave bare ground. In these cases, cultural control (i.e., seeding) should be used in combination with chemical control as part of a long-term management strategy. Re-vegetation can assist in preventing the return of an invasive plant or the introduction of new invasive species in an area. Cultural control can be used in environmentally sensitive areas, such as riparian zones. Grass seeding will be primarily used as a cultural control method on identified invasive plant sites where bare soil may exist.

Targeted grazing using domestic goats is not considered a control option on Teck properties. Wild sheep and goat populations exist on and adjacent to many Teck properties and Teck is proactive in preserving

these wild populations. There is risk of disease transfer from domestic to wild sheep and goats, therefore the use of domestic goats is currently prohibited.

3.4.2 BIOLOGICAL CONTROL

Biocontrol agents are insects that are intentionally propagated because of their ability to target a specific plant species and decrease the population density of that plant species by surviving off its seeds or other plant structures vital for reproduction. The goal of biological control is not to eradicate infestations, but to reduce population levels down to an acceptable, manageable level where environmental damage does not occur.

Ideal sites for biocontrol include infestations that are large and well established, remote and may not be accessible with other methods, low traffic areas, and natural or reclamation areas where vegetation is not maintained.

Teck may explore the use of biocontrol agents when this option aligns with program goals and objectives.

3.4.3 MECHANICAL AND MANUAL CONTROL

Mechanical control options for use on Teck sites are as follows:

- Clipping
- Mowing
- Covering/smothering
- Hand pulling, digging/excavating

Mechanical control is feasible on small sites where herbicide cannot be used (i.e., infestations near environmentally sensitive features or endangered species and where geographical features limit equipment access), or it can be an effective primary step, followed by herbicide treatment to control re-growth. The characteristics of individual invasive plant species influence whether mechanical control methods are appropriate. For example, mowing can increase the growth of some species, and timing of treatment is critical. Rhizomatous rooted species do not respond well to mechanical treatments unless 100% of the plant material is removed from the site. Physical treatment such as manual weeding, pruning, and cutting are most appropriate on smaller, more intensively managed sites, as these labour-intensive activities become more inefficient on large sites.

Appropriate practices for the mechanical treatment of a site include:

- Multiple treatments throughout the season
- Proper disposal of invasive plants
- Re-seeding with a certified weed free mixture
- Conducting treatments prior to plant flowering and seeding

Mechanical/manual control may be used on Teck properties where herbicide use is limited, such as riparian areas, or any sensitive wildlife features.

Proper Disposal Requirements

The disposal of invasive plant material will follow proper disposal procedures including:

- Carefully placing plant material and seed heads into garbage bags and tying tightly.
- Sealed bags should be disposed of in household waste in a landfill or transfer station.
- Garbage bags should be a minimum of 3 mm thickness to prevent ripping and/or tearing and inadvertent spread of weeds.
- Do not compost any weed materials.

3.4.4 CHEMICAL CONTROL

When pesticides are used, they will be applied as efficiently as possible, through careful timing and properly calibrated equipment by certified applicators. Certified applicators and license holders will conform to specified guidelines that are set out in the BC Ministry of Environment Integrated Pest Management Regulation (Province of British Columbia, 2016) and the Canadian Pesticide Education Program Applicator Core Manual (Ministry of Environment, 2011) in the areas of storage, handling, transport, application, equipment calibration, spill response, and environmental protection strategies.

Applicators will be aware of pesticide use procedures required to protect human health and take precautions to prevent unprotected human exposure to pesticide. They will perform an inspection of a proposed treatment area to ensure that the applicable regulatory requirements and standards can be met in carrying out the pesticide use. Particular care will be taken when treating large areas, using hazardous chemicals, near bodies of water, or close to sensitive fish and wildlife habitat. Chemical controls have restricted use within proximity to species at risk, domestic water intakes, water licenses, agricultural food production systems, environmentally sensitive or riparian areas, pesticide free zones (PFZ), no treatment zones (NTZ), or public use areas. They will be carefully selected with these variables in mind. Herbicides selected for use must be applied with target specific application techniques whenever practical.

Factors that will be considered in the decision to use herbicides include:

- The impacts of invasive plants on natural and managed resources (i.e., native plants, animals, communities, crops, waterways, etc.)
- Evidence that herbicide use to remove non-native invaders will improve the health of the resources rather than further jeopardize it.
- A clear understanding of provincial and local regulations on herbicides being used.

When used safely and properly, chemical control can have many benefits:

- Large areas can be effectively controlled;
- Soil disturbance is minimized and limited to vehicle or ATV/UTV or foot disturbance;
- Residual chemicals can control new plant growth for multiple years before degrading (depending on soil texture; coarse gravelly soils enable more permeation and less chemical persistence, whereas fine textured soils enable encourage more chemical residual);
- Costs can be significantly lower than mechanical/manual methods;
- Infested natural areas can be restored back to their original state, improving the health of the ecosystem.

The following Table 7 outlines a description of each type of chemical application equipment that may be used under this PMP.

Table 7. Chemical Application Equipment

Chemical Application Equipment	Description
Backpack or handheld sprayer	A portable, manually operated, low pressure container with a nozzle and a positive shut-off system used for spot application of herbicides onto foliage, basal bark areas, or into or onto freshly cut stems and stumps.
Vehicle mounted sprayer	A tank and pump unit mounted onto a four-wheel drive truck or ATV/UTV, with one or multiple handguns and potentially one or more boom and/or boomless nozzle attachments.
Wick/Wipe-on applicators	Absorbent pad, wicks or rope attached to a long-handled applicator or stick used to apply herbicides onto foliage, basal bark areas, or freshly cut stems or stumps.
Squirt Bottle	Hand-held, non-pressurized container used to apply herbicides onto foliage, basal bark areas, or freshly cut stems or stumps.
Injection Tools	Used to inject herbicides into individual stems.

In summary, various control methods are available for use and will be determined based upon the unique conditions of each site. Table 8 below describes the conditions for use as per each control method.

Table 8. Control Method Conditions for Use

Control Method	Conditions for Use
Cultural	<ul style="list-style-type: none"> Bare soil areas exist in identified invasive plant sites. No other viable or available options exist.
Biological	<ul style="list-style-type: none"> Targeted invasive plant infestations are large and well established, and Other treatment options have proven not to be feasible, i.e., site is remote and not accessible, and Targeted infestation is a low traffic area, as plants will continue to grow and reproduce normally until the bioagent is well established, therefore viable seeds can still be spread via vehicles or equipment. May be limited by availability for only specific species and/or survival conditions.
Mechanical / Manual	<ul style="list-style-type: none"> In areas where herbicide use is limited, i.e., riparian areas, or sensitive wildlife features. Small, manageable areas where multiple treatments can be effective.

	<ul style="list-style-type: none"> • Small infestations of high priority species where mechanical removal is considered effective and will increase eradication efforts. • Safety considerations and hazards around industrial sites are mitigated prior to approved use of mechanical control (i.e., weed whippers in the vicinity of electrical equipment). • May require additional control methods to maximize site remediation (i.e., cultural, chemical, or biological).
Chemical	<ul style="list-style-type: none"> • A pre-treatment inspection has been conducted by a qualified applicator and it is determined that there is little to no risk for using chemical control at the site. • The best method and product have been selected by a qualified applicator based on the pre-treatment inspection and individual site conditions. • Herbicides listed in Table 12 for invasive plant and noxious weed control will be used. • Restrictions (PFZs, NTZs) around water, wells, environmentally sensitive areas are strictly adhered to. • Treatment notices are posted in areas that may be accessed by the public. • Chemical application must follow all environmental protection strategies and procedures in Section 5 of this PMP.

The following Table 9 outlines the guidance to be followed for the most suitable and effective treatment methods for substations, railways, general industrial areas and noxious weeds and invasive plants.

Table 9. Guidance for Specific Control Areas

Area for control	Guidance for Control Methods
Electrical substations	<ul style="list-style-type: none"> • To effectively control all vegetation within substation compounds, herbicides listed in Table 12 for industrial vegetation control will be used. • Chemical treatment will include the full coverage of the compound and a one-meter-wide swath on the outer perimeter of the compound. • If target vegetation height and growth is established and chemical treatment will leave dead standing stems considered to be unacceptable, this vegetation will be removed manually or mechanically if deemed safe to do so by the supervising electrician. • The use of any tools within the electrical compound must be approved by the supervising electrician and documented in the Job Safety Analysis (JSA) • Any work within or immediately adjacent to electrical substations will require the direct supervision of a Teck electrician and a documented JSA. • If an electrical compound is located within a riparian or sensitive area, procedures in Table 11 (Section 5.2 of this PMP) will be strictly adhered to.
Rail Ballast	<ul style="list-style-type: none"> • Ballast section treatment includes all tracks within the Plan area.

	<ul style="list-style-type: none"> • To effectively control all vegetation within rail ballasts, herbicides listed in Table 12 for industrial vegetation and rail ballast control will be used if the applicable treatment threshold has been exceeded. • Vegetation on rail ballasts will be monitored and treated on an as-needed basis. • Treatment of vegetation present on rail bridges over water bodies will be conducted manually, mechanically, or spot treated using glyphosate. • Chemical treatment will be conducted via truck or ATV/UTV with a mounted spray unit with a boom/boomless nozzles and hose reel with wand. • Chemical application must follow all environmental protection strategies and procedures in Section 5 of this PMP.
Rail right of way (outside the ballast)	<ul style="list-style-type: none"> • The rail right of way outside the ballast may require treatment if deemed necessary for sightlines, on an as-needed basis if the applicable treatment threshold has been exceeded. • Noxious and invasive weeds requiring treatment within the right of way will follow the priority matrix outlined in Section 3.2.1 of this PMP.
Industrial Vegetation (general)	<ul style="list-style-type: none"> • To effectively control vegetation around industrial areas, such as maintenance buildings, plants, dryers, rail load out areas, equipment laydown yards, storage yards, parking areas etc., herbicides listed in Table 12 for industrial vegetation control will be used if the applicable treatment threshold has been exceeded. • Vegetation in these areas will be monitored and treated on an as-needed basis. • If an identified location for industrial vegetation control is located within a riparian or sensitive area, procedures in Table 11 (Section 5.2 of this PMP) will be strictly adhered to.
Noxious weeds and invasive plants	<ul style="list-style-type: none"> • Treatment of noxious weeds and invasive plants will follow the priority matrix outlined in Section 3.3 of this PMP (Identification and Injury Thresholds) and use appropriate methods based on site specific factors.

3.5 Monitoring Treatment Effectiveness

A minimum of two weeks after initial treatment a standardized efficacy survey will be performed by the Project/Contract Manager, designated QP, or an independent third party QP on a minimum of 20% of treated sites. Efficacy surveys will be conducted at regular intervals on projects throughout the treatment season. These surveys will be documented using an Efficacy Monitoring Record as specified in the Teck Efficacy Monitoring Protocol (Teck Coal Limited c., 2022). Data field collected during efficacy monitoring include the following:

- Date
- Site Efficacy Rating (0-10)
- Site Completion Rating (0-10)
- Final Site Rating (Efficacy Rating x Site Completion Rating)
- Further Treatment Required (Y/N)
- Comments

- Photos

The overall efficacy of invasive plant treatments is determined by a visual inspection of the site using two criteria: site efficacy (percent mortality of target species) and site completion (completion of treatment over the entire site). Both site efficacy and site completion are given a code from 0 – 10 (representing 0%- 100%).

The final site rating is calculated by multiplying the site efficacy rating code and the site completion code. If the final site rating is a minimum of 80% or higher, this indicates that the treatment was successful, and no further treatment is required on that site. If the final site rating is below 80%, this indicates that further treatment may be required, and can be recommended at the discretion of the QP.

If monitoring indicates that the treatment was not effective, not meeting intended goals, or that new infestations are identified, Teck will re-evaluate the treatment methods and determine if there is a need to implement alternative treatment strategies or additional treatments.

The results of all monitored sites should demonstrate an average final site rating of 80% or higher to define an achievement of success for the invasive plant program. If the average rating is less than 80%, the contractor in conjunction with the Project/Contract Manager or designated QP, will examine individual sites that have a rating less than 80% to determine the suspected issue. This could involve changes to treatment methodology.

4 Operational Information

4.1 Qualifications and Responsibilities of Persons Applying Herbicides

The transportation, storage, handling, application, and disposal of pesticides are governed by federal and provincial legislation. Personnel and their contractors will follow safe handling practices including workplace requirements for Workplace Hazardous Materials Information System (WHMIS) labelling and worker education. The required practices for pesticide applicators are detailed in:

- BC Ministry of Environment, Canadian Pesticide Education Program Applicator Core Manual; and,
- Work Safe BC (2009) Standard Practices for Pesticide Applicators

All herbicide applications under this PMP will be conducted or supervised by a person who holds a Pesticide Applicator Certificate endorsed for the class of pesticide and the pesticide use required under this PMP. Uncertified applicators must complete assistant applicator training annually. Those authorized to treat invasive plants under this PMP will be provided with pre-work information and sufficient oversight to ensure they fully understand the legislative requirements contained in the PMP.

The responsibilities of the Certified Pesticide Applicator are to:

- Confirm that uncertified applicators have successfully completed annual assistant applicator training;
- Be in continuous attendance at the site with available proof of certification;
- Ensure that applications do not violate this PMP or applicable legislation;
- Supervise no more than 4 assistant applicators at one time;
- Maintain continuous contact, auditory and/or visual, with the assistant applicators;
- Be within 500 meters of persons being supervised; and
- Comply with the record requirements contained in Division 7 of the IPMR.

4.2 Procedures for Safely Transporting Herbicides

The transportation of herbicides will comply with all Federal and Provincial laws governing their transport. In addition, personnel shall follow these procedures for safely transporting herbicides:

- Ensure that herbicides are carried in a compartment that is secured against spillage and unauthorized removal. The compartment shall be separate from food and drinking water, safety gear, spill containment equipment and people;
- Ensure that all herbicide containers are inspected for defects prior to transporting. Herbicides will either be kept in their original containers with intact labels, or they may be stored in appropriate containers that have a copy of the label affixed to the outside of the container. Herbicides that come in large 10-liter containers can be transferred to smaller, easy to use containers for transport to, and use at, small sites;

- Ensure that the vehicle is equipped with a first aid kit, fire extinguisher, spill contingency plan and kit, and that the vehicle operator has been trained to handle spills;
- Ensure that all documents and placards are carried in, or placed on, transport vehicles as required under the Transportation of Dangerous Goods Act, the Integrated Pest Management Act (IPMA) or the IPMR; and
- Ensure that the vehicle operator reads and understands the herbicide labels and the product Material Safety Data Sheet (MSDS) for all herbicides being transported.

4.3 Procedures for Safely Storing Herbicides

Other than temporary storage on a contractor's mobile equipment, there will be no storage of pesticides on Teck property. All herbicide materials required for Teck work are acquired as needed from regional distributors who are appropriately licensed. All temporary storage of herbicide on a contractor's mobile equipment will comply with Section 4.2 of this PMP (Procedures for Safely Transporting Herbicides).

Contractor's mobile equipment will be parked well away (>15m) from any surface water to avoid potential contamination from spills.

4.4 Procedures for Safely Mixing, Loading and Applying Herbicides

The PMP holder will ensure that the following procedures for safely mixing, loading, and applying herbicides within the Plan Area are adhered to:

- Ensure that all mixing, loading and application of herbicides is carried out by, or directly supervised by, a Certified Pesticide Applicator with the appropriate category of certification, and that all manufacturer's recommendations, as specified on the herbicide labels, are adhered to;
- Ensure that all mixing, loading and application of herbicides is undertaken in a safe manner. All mixing and loading shall be undertaken only in areas at least 15 meters from PFZs, NTZs, bodies of water, fish or wildlife habitat, water sources, or other environmentally sensitive features to prevent, any spilled herbicides from entering these features.
- Ensure that containers used to mix, prepare, or apply herbicides are not washed or submerged in any body of water;
- Ensure that eye wash station(s), protective clothing, safety spill kits, spill response plans, a copy of the invasive plant PMP, each herbicide product's MSDS, emergency telephone numbers and first aid supplies are present and available at or near each mixing, loading or treatment site;
- Follow all directions and restrictions on herbicide product labels, including adhering to the recommended re-entry times to treated areas unless personal protective equipment is worn; and,
- Ensure that the listed herbicides in this PMP will only be mixed with water as a carrier for herbicide applications.

4.5 Procedures for Safe Disposal of Empty Herbicides Containers and Unused Herbicides

The responsibility of container disposal will lie with the contractor. The PMP holder shall ensure that contractors follow these procedures for the safe disposal of empty herbicide containers and unused herbicides within the Plan Area:

- Ensure that all herbicide waste is disposed of in a manner consistent with all relevant laws, and in accordance with the manufacturer's instructions as noted on the product label, as appropriate;
- Ensure that empty herbicide containers are returned to the herbicide distributor as part of their recycling program; or triple rinsed or pressure rinsed, altered so that they cannot be reused, and disposed of in a permitted sanitary landfill or other approved disposal site; and
- Ensure that all leftover herbicide mix is stored for future use in a manner consistent with the requirements specified in Section 4.3 on this PMP (Procedures for Safely Storing Herbicides).

4.6 Procedure for Responding to Herbicides Spills

Teck has in place a Spill Response Standard Procedure for spills occurring on Teck property or mine-permitted public lands. Hazardous material spills have the potential to pose a serious risk. If safe to do so, take immediate actions to stop and contain the spill. If a spill could result in an injury, fire, escape of toxic material, or is of an emergency nature, contractors must notify the Teck Loss Prevention Officer (LPO) to mobilize the Mine Rescue Team.

Contractors must always carry an adequate spill response kit and follow the Teck Spill Response Standard Procedure (Teck Coal Limited d., 2022) for reporting spills.

General Herbicide Spill Response Action Plan for Contractors working under this PMP include the following:

- **Control the spill, if safe to do so;**
 - Protect self and others from exposure by using appropriate Personal Protective Equipment (PPE)
 - Turn-off or stop the flow of herbicide – close valves, re-position leaking containers, etc.
 - Retrieve information on the spilled product – product MSDS should be on hand and referenced for instructions and emergency phone numbers.
- **Contain the spill, if safe to do so;**
 - Spilled product should be contained quickly to prevent the spread.
 - A spill kit should be on hand for quick response, spill collars and absorbent material can prevent liquid from moving.
 - Spills should be prevented from entering drains, wells, water systems and waterways.
- **Report the spill**
 - All contractors must immediately report the spill to their Teck Supervisor, the Supervisor will then determine the correct course of action by following the Environmental Management Act Spill Reporting Regulations.
- **Clean-up spill and area**
 - Once contained, the spill can be cleaned up if safe to do so, product MSDS instructions should be followed if provided, otherwise;
 - Sweep up or shovel absorbent material into a designated solid waste container or heavy-duty plastic bag.

- Decontaminate the area – areas should be cleaned thoroughly using water, wash water should be kept contained by using additional absorbent materials.
- Seal and store waste and dispose properly according to Teck site waste guidelines.
- **Clean up equipment and persons involved**
 - Decontaminate and clean equipment and protective gear.
 - All personnel involved with the spill should shower thoroughly.

5 Environmental Protection Strategies and Procedures

All vegetation management activities, both chemical and non-chemical proposed for use under this PMP will incorporate:

- Strategies to protect community watersheds, and other domestic and agricultural water sources;
- Strategies to protect fish and wildlife, riparian areas, and wildlife habitat;
- Strategies to prevent herbicide contamination of food intended for human consumption;
- Pre-treatment inspection procedures for identifying treatment area boundaries;
- Procedures for maintaining and calibrating herbicide application equipment; and
- Procedures for monitoring weather conditions and strategies for modifying herbicide application methods for different weather conditions.

For the purposes of this PMP, the following definitions apply:

No Treatment Zone (NTZ) - an area of land that must not be treated with pesticides. NTZs will be identified, marked/flagged, or visually identified and discussed prior to any herbicide application.

Pesticide Free Zone (PFZ) - an area of land that must not be treated with pesticides and must be protected from pesticides moving into it. PFZs are measured by the horizontal distance from the highwater mark or the sensitive area. PFZs will be identified, marked/flagged or visually identified and discussed prior to any herbicide application.

5.1 Strategies to Protect Community Watersheds and Other Domestic Water Sources

Current information indicates that no community watersheds are located within the geographic boundaries of the Plan area. Consequently, no strategies are required to protect community watersheds during invasive plant and vegetation management activities.

The PMP holder shall ensure that all Certified Pesticide Applicators with authorization to work under this PMP take steps to determine the location of registered domestic, agricultural, and other water intake sources prior to herbicide application for invasive plant and vegetation management.

Certified Pesticide Applicators working under this plan shall:

- Ensure both online water licence and well layer resources listed below are reviewed prior to treatment:
 - The BC Water Resource Atlas <https://catalogue.data.gov.bc.ca/dataset/bc-water-resources-atlas/resource/ad27cad8-f5db-489b-9c87-96d3efe85104>
 - Groundwater wells and aquifers: <https://apps.nrs.gov.bc.ca/gwells/>
- Conduct visual observation looking for wells, water lines into nearby creeks, notifications posted on private land fences, or other indicators that water is being extracted for domestic, agricultural, or other purposes within 30m of the treatment area;

The following Table 10 describes minimum protective measures and reflects the standards specified in Sections 71(3) and 71(4) of the IPMR for No Treatment Zones (NTZ).

Table 10. Herbicide Application No Treatment Zones

Herbicide Application	Permitted Applications	NTZ
All herbicide applications	Must maintain a 30m NTZ around a licenced water supply intake or well	30 meters
All herbicide applications	May reduce the NTZ under Section 71(3) if reasonably satisfied that the smaller zone will ensure that pesticide from the use will not enter the water supply intake or well.	NTZ at discretion of Plan Holder

5.2 Strategies to Protect Fish and Wildlife, Riparian Areas, and Wildlife Habitat

For all work conducted on Teck properties and mine permitted lands, Teck requires the completion of an Environmental Protection Work Plan (EPWP) when a project includes elements that present environmental risk, including working around water or sensitive wildlife habitat.

The following measures will be implemented in order to protect fish, riparian areas, and bodies of water from adverse effects during chemical and non-chemical control.

During invasive plant management activities:

- Ensure that whenever herbicide, manual or mechanical control methods are applied, no impact to water bodies will occur. Reducing negative impacts to streamside vegetation and bank stability will reduce erosion and water turbidity;
- Ensure that best management practices that comply with the IPMR are applied during invasive plant management;
- Hold pre-work meetings with contractors and affected agencies to ensure all involved in the invasive plant management process can competently protect riparian areas and bodies of water during the course of the work;
- Prevent invasive plant control impacts on water bodies and riparian areas by ensuring that contract documents and prescriptions will describe best management practices that will include no refueling of machinery, herbicide mixing or clean up (excluding the case of an emergency spill), within 15 meters of a riparian zone;
- Ensure that minimum protection measures are adhered to according to the requirements specified in the IPMR during herbicide applications for all bodies of water, dry streams, and classified wetlands;
- All PFZs will be measured and marked/flagged prior to herbicide use;
- For noxious weed and invasive plant management, a 10-meter PFZ shall be maintained from the point of herbicide application and all bodies of water only selectively applied glyphosate shall be used where necessary within this PFZ up to 1 meter away from high water, for compliance with Section 77 (2) of the IPMR;
- Applicators must not apply herbicide more than 1.5 m from a targeted weed or plant.

During treatment of industrial vegetation and railways;

- Applicators must not apply pesticide to *Rubus* species (raspberries and thimble berries) of plants that are more than 3 m away from rails, signals or switch stands from the time the flowers open until the berries have predominantly dropped from the vines;
- May spray pesticide when wind speeds are between 8 km per hour and 16 km per hour if a shrouded boom is used;
- May apply pesticide from a moving vehicle if a shrouded boom is used and the vehicle speed is not more than 30 km per hour, or a shrouded boom is not used, and the vehicle speed is not more than 16 km per hour.
- Must ensure that a minimum 10 m pesticide-free zone is maintained around or along bodies of water, dry streams and classified wetlands as required in section 73 (1) of the IPMR.
 - PFZ must be measured in horizontal distance from the high-water mark of the body of water, dry stream or classified wetlands.
 - Applicators must ensure that a NTZ, sufficient to ensure the maintenance of the pesticide-free zone is maintained around the pesticide-free zone.
- When using glyphosate, applicators may reduce the pesticide-free zone required under section 73 (1) for certain areas based upon the water body specifications outlined in Table 11.

5.2.1 SUMMARY OF PESTICIDE FREE ZONES

The following Table 11 summarizes the requirements for PFZ and NTZ.

Table 11. Summary of Pesticide Free Zones

Herbicide Application	Railway Ballast, Signal, Switch or Yard	Railway Right of Way	Substations	Invasive Plant Sites
Non-Glyphosate Applications				
Bodies of water, dry stream and classified wetlands using any herbicide except glyphosate subject to label restrictions and including all application methods.	10m PFZ	10m PFZ	10m PFZ	10m PFZ
Glyphosate Applications				
A body of water or classified wetland that is fish bearing or drains directly into a fish bearing body of water, or dry stream that when wet is fish bearing or drains into a fish bearing body of water.	2m PFZ or 1m PFZ if selective application for noxious weeds or invasive plants	5m PFZ or 2m if selective applications methods or 1m PFZ if selective application for noxious weeds or invasive plants	2m PFZ or 1m PFZ if selective application for noxious weeds or invasive plants	1m PFZ if selective application is used between 1m and 10m above the high-water mark.
A body of water that is not fish bearing and does not	1m NTZ	2m NTZ	1m NTZ	1m PFZ if selective application is

drain into a fish bearing body of water.				used between 1m and 10 m above the high-water mark.
A temporary free-standing body of water that is not fish bearing at any time of the year and does not drain directly into fish bearing waters.	Application up to high water mark	Application up to high water mark	Application up to high water mark	Application up to high water mark
A dry stream that is not fish bearing at any time of the year and does not drain directly into a fish bearing body.	Application over a dry stream	Application over a dry stream	Application over a dry stream	Application over a dry stream

5.2.2 BIRD GUIDANCE

Teck recognizes that birds are a large group of wildlife that contribute substantially to regional, continental, and global biodiversity. Provincial and federal laws prohibit causing harm to birds, eggs, or their nests. In addition to environmental effects, disturbances to breeding birds and bird deaths can have both legal and social repercussions. Teck sites in Canada follow a standardized corporate Bird Guidance document (Teck Resources Limited, 2021) that outlines initiatives and procedures that support operating in a sustainable manner. Bird guidance is intended to be consistently applied at all Teck sites in Canada, through all stages of mining, to reduce the potential for adverse effects on birds and any resulting legal and/or social risks. To mitigate risk to birds in relation to herbicide application, contractors are required to take awareness training and conduct nesting or ground assessments during seasonal periods of high nesting potential.

5.3 Strategies to Prevent the Contamination of Food Intended for Human Consumption

Vegetation control measures and herbicide products are carefully selected and appropriately managed to minimize the potential for impacts to non-target areas including neighboring farms lands as well as known sites in undeveloped areas used by First Nations and others for harvesting plants intended for human consumption. There is no unauthorized access for the general public on any Teck mine sites, this therefore greatly limits any harvesting of berries, etc. for human consumption. The public is, however, able to access some offsite mine permitted public lands, the following measures will be in place to prevent the contamination of any food sources:

- Applicators must not apply pesticide to *Rubus* species of plants that are more than 3 m away from rails, signals or switch stands from the time the flowers open until the berries have predominantly dropped from the vines.
- Treatment Notices will be posted at public access points to proposed herbicide treatment areas advising of herbicide use near these sites. This will communicate that the area has been treated with herbicides and signs will advise when it is safe to re-enter the area. In most cases this is 24 hours from the time of herbicide application.

- First Nations people within the PMP Area may use several species of native plants for ethno-botanical purposes. Through the engagement and consultation process, the PMP holder will encourage the submission of culturally important plant species and sites so that these areas and species can be avoided during treatment activities to prevent any potential contamination.
- Where possible, herbicide treatments shall be conducted at times to minimize impacts on food/medicinal plant production and harvesting (i.e., delay treatments until after the fruit has predominantly dropped from the plant, use of non-residual herbicides if possible) and on cultural uses (i.e., delay treatments until after traditional use occurs, use of non-residual herbicides if possible).

5.4 Pre-Treatment Inspection Procedures for Identifying Treatment Area Boundaries

The following procedures shall be implemented to ensure that treatment area boundaries are identified and, where necessary, clearly marked prior to herbicide application:

- A pre-treatment inspection will be conducted to establish treatment boundaries and to document the location of environmentally sensitive areas;
- A meeting at the start of the season shall be held between the Contractor and the PMP holder, or a representative of the PMP holder, to confirm treatment area boundaries and the locations of environmentally sensitive features.
- Contractor daily and weekly work plans are required which will outline specific planned treatment sites including any important site information such as PFZs, NTZs.
- Marking/flagging of PFZs will be completed prior to herbicide application.

5.5 Procedures for Maintaining and Calibrating Pesticide Application Equipment

Accuracy and knowledge of the sprayer output is essential for proper application of herbicides. Understanding the sprayer output will ensure correct rates of herbicide is being applied to achieve the required level of control.

Contractor herbicide application equipment may include the following:

- Backpack sprayers
- UTV/ATV mounted sprayer with hose reel and wand, boomless nozzles
- Truck mounted sprayer with hose reel and wand, boomless nozzles

All contractor herbicide application equipment used under this PMP for invasive plant and vegetation management is required to be inspected by the contractor and calibrated prior to the commencement of herbicide applications at the start of the season, as well as following any equipment modifications (changing nozzles, pumps, etc.). Contractor's equipment will be routinely inspected by the PMP holder to be in good working order, safe, clean, compatible with, and appropriate for, the herbicide being applied.

Through regular efficacy monitoring of contractor's treated sites, the PMP holder can identify if treatment was not effective or not meeting intended goals. Teck in consultation with the contractor will re-evaluate

the treatment methods and equipment to determine if there is a need to re-calibrate equipment or implement alternative treatment strategies or training.

Equipment calibration procedures are shown in Appendix II. Contractors must maintain these records and provide them to the PMP holder upon request.

5.6 Procedures for Monitoring Weather Conditions

It is the responsibility of the contractor to review each product label for guidelines for applying herbicides under various weather conditions, as well as to monitor weather forecasts and determine if conditions are suitable to conduct herbicide applications in order to minimize spray drift or runoff onto non-target species and areas, and to meet pesticide label requirements.

The following weather conditions shall be monitored using the appropriate measuring devices (anemometer and thermometer) and recorded prior to and periodically during herbicide applications and to be used, if necessary, in evaluating treatment effectiveness or impacts that may be related to weather:

- Wind speed
- Wind direction
- Precipitation
- Temperature

Modifications to herbicide application methods due to weather changes include stopping a treatment, increasing the size of NTZ, directing sprays away from treatment boundaries, changing from broadcast sprays to selective treatment, or using shrouds over nozzles.

Herbicide applications shall cease if any of following conditions exist:

- When parameters are exceeded according to the manufacturer's label;
- When conditions prevent the herbicide product from being applied effectively according to the label instructions (e.g., periods of rain or snow);
- When heavy precipitation is imminent;
- It begins to rain during the herbicide application, increasing the chances of excessive runoff or leaching;
- There is dew, ice, or frost on the foliage;
- When wind speed and/or direction causes the foliar application of herbicides to drift and/or miss the target noxious weed or invasive plant;
- Ground wind velocity is over 8 km/hour for foliar or soil applications;
- The maximum air temperature exceeds 28°C, or the maximum stated on the herbicide label is exceeded.

6 Herbicide Selection and Use

Understanding the product is the key to proper application precautions including treatment methods, and specific regulatory guidelines. Each herbicide is unique in respect to modes of action, as well as specific safety precautions to protect both humans and the environment. In deciding which herbicide to use, the following herbicide properties will be considered by the contractor:

- The effectiveness of the herbicide against a target species;
- How the herbicide will improve the overall health of a natural area;
- How the herbicide will dissipate in the environment (how long it will persist before it degrades and whether it will be moved to non-target areas by air or water);
- Herbicide behavior in soils, water, and vegetation;
- Herbicide toxicity to humans, animals, aquatic species, and other non-target organisms;
- Application methods;
- Accessibility and proximity to water and the hydrology of the system that is being treated, including depth of groundwater;
- Presence of managed and natural resources (i.e., rare, and endangered species) that are being protected;
- Impact of trampling on protected resources during the application effort.

Below in Table 12 is a list of herbicides that may be used under this PMP and are regulated under the Pest Control Products Act, administered by the Pest Management Regulatory Agency of Health Canada. Each active ingredient can have multiple trade names, these similar products from different manufacturers may be used over the course of the PMP duration.

Table 12. List of Herbicides for Use

Active Ingredient	Product Trade Name	PCP Registration Number	Weeds Treated	Treatment Information
Aminopyralid	Milestone	28517	Canada Thistle Common Tansy Knapweed Scentless Chamomile Absinthe wormwood	Post emergence, selective, broadleaf herbicide for invasive plant control. The active ingredient does not cause significant mortality or impacts on tree and brush species or grasses. It provides up to three years of residual control which allows for treatment under tree canopies and through native brush species.
	Restore II	30632		
	Clearview	29752		
	Reclaim	30062		
	Reclaim II	30063		
Clopyralid	Lontrel XC	32795	Canada Thistle Scentless Chamomile Perennial Sowthistle Ox-eye Daisy Spotted Knapweed Diffuse Knapweed	Post emergence, selective, broadleaf herbicide for use on medium to fine textured soils. Less persistent in the soil than picloram. No impact on woody vegetation.
	Lontrel 360	23545		

Active Ingredient	Product Trade Name	PCP Registration Number	Weeds Treated	Treatment Information
Metsulfuron-methyl	Clearview	29752	Canada Thistle Common Tansy Oxeye Daisy Russian Thistle Scentless Camomile Spotted Knapweed Wild Mustard Blueweed Absinthe wormwood	Post emergence non-selective broadleaf weed control in right-of-way, industrial and other non-crop areas. Rapid inhibition of plant cell division and growth.
	Escort	23005		
	Reclaim	30062		
	Reclaim II	30063		
Picloram	Tordon 22K	9005	Scentless Chamomile Diffuse Knapweed Spotted Knapweed Perennial Sowthistle Canada Thistle Russian Knapweed Leafy Spurge Dalmatian Toadflax Yellow Toadflax Blueweed	Selective broadleaf weed control on medium to fine soils. Avoid trees and coarse textured soils due to residual factor of 3-7 years. Not for commercial and residential-zoned use. Because picloram may persist in the soil, care must be taken to avoid areas where soil may be moved or where there is a shallow aquifer or domestic water intake.
	Tordon 101	9007		
	Grazon XC	31642		
Fluroxypyr	Sightline A	30409		Selective herbicide for the control of annual broadleaved weeds in rangeland, permanent pasture, rights-of-way, industrial and other non-crop areas. It is effective for controlling hard-to-kill annual broadleaved weeds such as kochia (including glyphosate-resistant plants)
	Sightline B	30795		
Glyphosate	Round up	22627	Annual grasses and many perennial weeds and brush	Post emergence, non-selective control. It is not persistent because it is rendered inactive when it contacts soil. It may be used within 1 meter of a high-water mark if selectively applied for invasive plant control, and application near water is by spot treatment.
	Weathermax Pro	33653		
	Transorb HC	28198		
	Vantage Plus II	27615		
	Vantage XRT	29994		
	VP480	28840		
2,4-D	Grazon XC	31642	Burdock, Canada thistle, Common tansy, Hound's tongue, Orange hawkweed, Scentless, chamomile, Knapweeds	Selective non-residual translocated herbicide. Post emergence broadleaf control. It is most effective when the target plant is actively growing, as it is more actively taken up by the foliage than the roots.
	2,4-D Amine	14726		
	Restore II	30632		
	Dyvel DSp	27856		
	Reclaim	30062		
	Reclaim II	30063		
	Tordon 101	9007		

Active Ingredient	Product Trade Name	PCP Registration Number	Weeds Treated	Treatment Information
Imazapyr	Arsenal Powerline	30203	Most annual and perennial grasses and broadleaf weeds, as well as some deciduous woody plants	Residual, non-selective, pre-emergent and post-emergent herbicide used to control broadleaf vegetation, annual and perennial grass species and woody vegetation. Industrial, roadside, railway and right of way applications.
Dicamba	Dyvel DSp	27856	Most broadleaf weeds, and many deciduous and coniferous brush species.	Selective, non-residual herbicide used for the spot treatment of young, actively growing broadleaf weeds and brush species. It is useful in areas where grasses are to be retained on the site.
	Vanquish	26980		
	Overdrive	30065		
	Banvel VM	29249		
	Banvel II	23957		
Indaziflam	Esplande	31333	Annual grasses and broadleaf weeds	Preemergent residual herbicide for use in Non-Residential Non-Crop Areas such as: Railroad and Rail Yards, Managed Roadsides, Utilities, Industrial.
Flumioxazin and pyroxasulfone	Torpedo	29391	Selective grasses and broadleaf weeds	An effective preemergence herbicide used on selective grass and broadleaf weeds. It provides residual for up to 3 months and is most effective when applied to clean, weed free soil. Preemergent seedlings are controlled when exposed to sunlight following contact of soil applied herbicide. Length of residual control is dependent on application rate, rainfall and temperature conditions.
Surfactant, Adjuvants and Dyes	Gateway	31470		Adjuvants, including surfactants, are chemicals or agents that are sometimes added to the herbicide spray mix to allow easier mixing, and to assist in the spreading of the herbicide spray mix and the wetting of, and adherence to, the surface of the plants being treated. This has been shown to decrease the possibility of drift (the movement of the applied material away from the intended target to adjacent areas by wind). Blue herbicide spray marker dye is regularly used as it enables the herbicide applicator to see where they have treated, thus eliminating over-spray and identifying missed target plants.
	Xiameter	23078		
	Hasten NT	28277		
	Hi Light Dye Blue Indicator Blue II	N/A		

7 Records and Reporting

Accurate record keeping allow both Teck and the Administrator of the Integrated Pest Management Act, to monitor the quantity of pesticides used, and to ensure compliance with the Integrated Pest Management Act and Regulation, the commitments made in this PMP, and the contents of the Pesticide Use Notice. Teck will ensure that each of the required records described below are maintained.

7.1 Treatment Records

Contractors applying herbicide under this PMP are required to maintain daily records of herbicide use. All treatments will be documented using a Treatment Record as specified in the Teck Treatment Protocol (Teck Coal Limited e., 2022). Records are maintained digitally in the Teck GIS system. In accordance with Section 37(1) of the IPMR the following fields are included for all treatment records and must be collected for each treatment location and day of use:

- Region
- Date
- Location Description
- Treatment Type
- Site Priority Recommendation
- Site Photo
- Species percent, Distribution and Density
- Temperature
- Wind Speed
- Wind Direction
- Treatment Method
- Herbicide Trade Name, PCP
- Application Rate
- Mix Used
- Surfactant Used
- Delivery Rate
- Chemical Amount Used
- Area Treated
- Applicator names and certificate numbers
- Comments

7.2 Annual Report of Pesticide Use

In accordance with Section 39 of the IPMR, Teck will provide to the Regional Administrator, Integrated Pest Management Act, the following information for a calendar year by January 31 in the next calendar year for operations conducted under this PMP during the calendar year:

- The name and address of the confirmation holder, and their confirmation number
- Trade name and active ingredient of the pesticide(s) applied, including their PCP numbers
- Total area treated
- Quantity of each active ingredient applied (kg)

7.3 Annual Notice of Intent to Treat

As per section 42 of the IPMR, for the purpose of an annual Notice of Intent to Treat, Teck will prepare and retain a detailed map(s) showing the treatment locations for the applicable calendar year.

Teck will forward to the B.C. Ministry of Environment, at least 21 days prior to treatment in each year during which the PMP is in effect, an Annual Notice of Intent to Treat (NIT) for the following year. This NIT will identify:

- Name and business location
- Proposed treatment locations
- Pesticides proposed for use and their method of application
- The total area proposed for treatment

7.4 Posting of Treatment Notices

Prior to treatment, contractors will be responsible for posting treatment notices so they are clearly visible at areas that may be accessed by the public. The Notice of Herbicide Use is included in Appendix III. Notices will remain posted for 14 days and will contain the following information:

- The trade name of the pesticide that has been applied and the Pest Control Act (PCP) registration number
- The date of pesticide use
- The purpose of the treatment
- Precautions to be taken to prevent harm to people entering the treatment area
- The confirmation number of the PMP
- A contact telephone number for the PMP holder

8 Consultation

8.1 Summary of Public Engagement

Prior to submitting a Pesticide Use Notice Confirmation Application to the Ministry of Environment, Teck will carry out a public consultation process. The objectives of conducting public consultations when this PMP is at the draft stage are:

- To increase public awareness of the PMP process and of the principles of Integrated Pest Management which are embodied in the PMP.
- To ensure that the public has an opportunity to identify concerns, and for Teck to address those concerns, before the PMP is finalized and submitted and a Pesticide Use Notice submitted for confirmation.
- To ensure a transparent and accountable review process for the PMP.
- To educate the public on the need to manage problem vegetation, noxious weeds, and invasive plants.
- To explain how the planning process that is described in the PMP recognizes the need to protect human health and the environment.

The public will be consulted of the PMP development via notices in local newspapers in communities affected by this PMP. As per Section 61(1) of the IPMR, at least 45 days before submitting a Pesticide Use Notice, the first of 2 notices, at least 40 cm in size, will be published within a 2-week period in newspapers circulated in the nearest communities.

During the public consultation process, a copy of the PMP will be available for viewing at the following locations:

Teck Coal Limited Social Responsibility Office
116 Centennial Street Sparwood, BC

Sparwood Public Library
110 Pine Ave, Sparwood, BC

Or on the Teck website at www.teck.com/access

In addition, copies of the PMP may be requested through the Teck Feedback Coordinator:

By phone: 1-855-806-6854

Or by email: feedbackteckcoal@teck.com

8.2 Consulting Landowners and Communities

There are organizations and municipalities that have interests within or adjacent to Teck's operations in the Elk Valley that may be impacted by control activities outlined in this PMP. This PMP will be sent to the following stakeholders for consultation:

- East Kootenay Invasive Species Council (EKISC)

8.3 Summary of First Nations Engagement

Teck operations, private and mine permitted lands are located on traditional Ktunaxa lands. First Nations engagement will be conducted with the Ktunaxa Nation Council (KNC) and Yaqit ʔa·knuqʔi ʔit, as per the Ministry of Environment Draft Guidelines for IPM Proponents Conducting Consultations with First Nations (Ministry of Environment, 2011).

The following proposed categories of pest management have been identified, in the view of the Ministry of Environment, as having no contemplated adverse impacts, and as such, notification will be provided to the KNC and Yaqit ʔa·knuqʔi ʔit of these activities.

- Noxious Weed and Invasive Plant Management
- Vegetation Management on Industrial Sites on Public Land - specifically the subcategory:
 - Management to maintain sites in a near vegetation-free state to reduce fire or safety hazards in areas with no access by unauthorized people.
- Pest Management on Railways – specifically the subcategory:
 - Use of herbicides on railway ballast and around switches and signal facilities in maintenance yards with the objectives include worker safety, maintaining the integrity of the rail bed, reducing fire hazard.

Teck is proposing additional activities under the category of Pest Management on Railways, specifically the subcategory:

- Use of herbicides on the railway right-of-way outside the ballast area for treatment of selected trees and shrubs that obstruct views of oncoming traffic.

This above subcategory has identified potential for adverse impact. This adverse impact is identified as being the removal of potential food sources such as berry producing shrubs and vegetation. Teck will seek consultation with KNC and Yaqit ʔa·knuqʔi ʔit on these specific management activities.

8.4 Notification and Consultation Requirements for Amending a Pest Management Plan

8.4.1 AMENDING THE PEST MANAGEMENT PLAN

Teck will forward, in writing, to the Ministry of Environment, amendments requested for the PMP. Amendment requests to add new application techniques or similar changes will not require further public advertising or First Nations consultation, provided that the amendment request is within land owned or controlled by the PMP holder. Amendments to add new active ingredients will require further public advertising and/or First Nations consultation.

8.4.2 AMENDING A PESTICIDE USE NOTICE

If any of the following information on the Pesticide Use Notice (PUN) is to be changed, public consultation will be required as per Section 61 of the IPMR before an amended PUN is submitted to the Ministry:

- Using a different class of pesticide (i.e., Domestic, Commercial, Restricted)

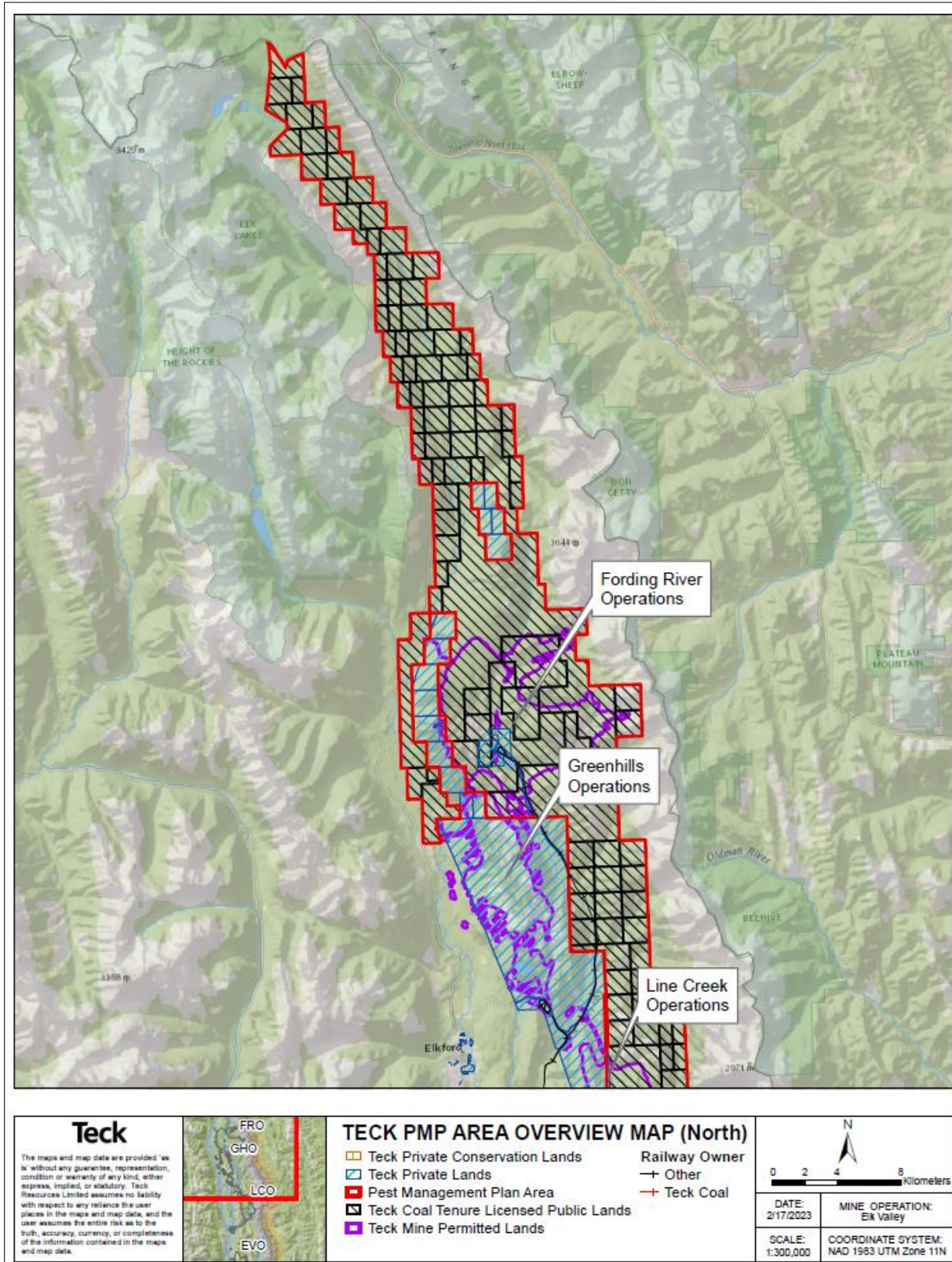
- Changing the prescribed use under Section 24(2) of the IPMR
- Adding a new pesticide active ingredient; and
- Increasing the geographic boundary of the area to which the PMP applies (i.e., adding new pesticide treatment areas outside of the original boundaries described in the PUN).

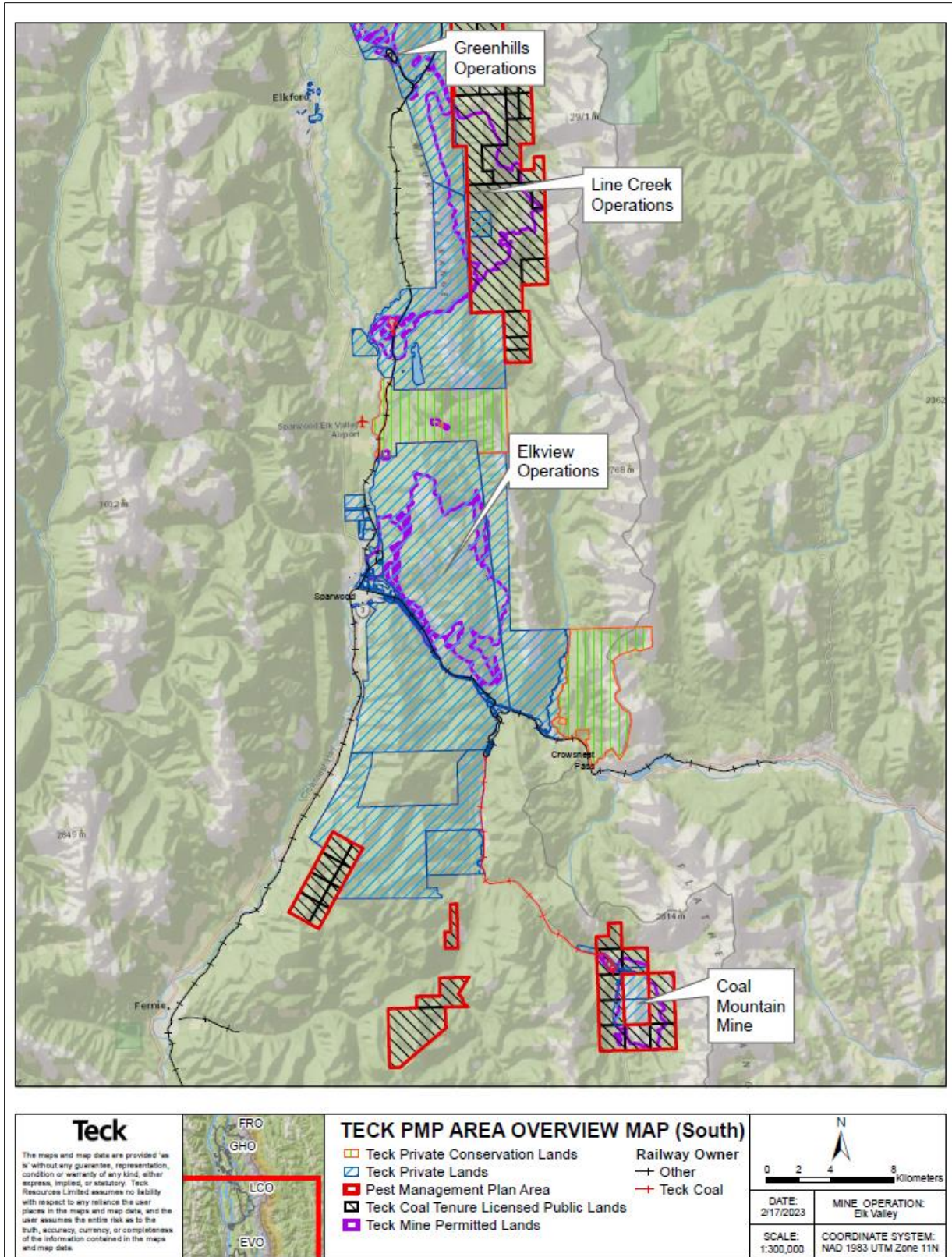
The consultation to be conducted is outlined Section 61 of the IPMR including advertising in newspapers (appropriate for the area that the changes are to occur) and consulting with individuals and organizations that may be significantly impacted. Consultation for amendments should include sending a notice of the amendments with an invitation for comment to individuals who raised concerns during the initial public consultation.

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Appendix I Teck PMP Area Overview Maps





Appendix II Equipment Calibration Procedures

CALIBRATING SPRAYERS (metric)

All sprayers require calibrating. Accuracy and knowledge of the sprayer output is essential for proper application of herbicides. Knowing the sprayer output will ensure correct rates of herbicide are being applied so as to achieve the required level of control.

Before calibration:

1. Make sure the tank is clean to prevent clogging of hoses and nozzles.
2. Check that all hoses and fittings are not leaking,
3. Ensure the nozzles are not worn or damaged.

These inconsistencies will certainly affect the output.

Calibrating:

First measure the delivery rate or the output of your backpack sprayer by:

- 1) Accurately measure and mark a test strip in the field or a driveway. ie: a 100 metre strip
- 2) Measure the width of the spray swath. Be aware that the spray width varies with the type of nozzle used and the height of the nozzle above the ground. (on boom sprayer it is the distance between the two outer spray nozzles + the distance between two nozzles.
- 3) Fill the sprayer half full of water and mark this level on the tank. Select spray speed and select desired pressure (3 – point hitch sprayers will select and maintain constant RPM on pump drive) Begin spraying the tank water mixture over the selected/measured test area. (Variation in speed and pumping pressure will change the output)
- 5) Accurately measure the amount of water required to refill the tank to the mark established in step. 3. Always return the sprayer to the same location to refill and measure the water required to tank.
- 6) Calibrate the sprayer delivery rate (output) by using the following formula.

Note: You may also carry out the above process by measuring the time it took to spray the water mixture over the test area and collecting the water from each nozzle for the same duration of time it took to spray the test area

$$\text{Sprayer Delivery Rate (L/ha)} = \frac{\text{Litres used in test} \times 10,000 \text{ (m}^2 \text{ /hectare)}}{\text{Spray width (m)} \times \text{Test Distance (m)}}$$

$$\frac{\text{L} \times 10,000}{\text{m} \times \text{m}} = \frac{\text{L}}{\text{m}^2} = \text{L/ha}$$

Secondly, calculate the area that can be treated with a full tank.

$$\text{Area sprayed by 1 tank} = \frac{\text{Volume of spray mixture in tank (tank capacity)}}{\text{Sprayer Delivery Rate (L/ha)}}$$

$$\frac{\text{L}}{\text{L/ha}} = \text{ha.}$$

Thirdly, calculate the amount of herbicide to add to the backpack sprayer tank as follows:

$$\text{Amount of herbicide to add to tank} = \text{application rate} \times \text{area sprayed by one tank}$$

$$\text{Herbicide to add per tank} = \text{L/ha (label rate)} \times \text{ha. (area tank covers)} = \text{litres}$$

CALIBRATING BACKPACK SPRAYERS

Even small backpack sprayers require calibrating. Accuracy and knowledge of the sprayer output is essential for proper application of herbicides. Knowing the sprayer output will ensure correct rates of herbicide are being applied so as to achieve the required level of control.

Before calibration:

1. Make sure the tank is clean to prevent clogging of hoses and nozzles.
 2. Check that all hoses and fittings are not leaking,
 3. Ensure the nozzle is not worn or damaged.
- These inconsistencies will certainly affect the output.

Calibrating:

First measure the delivery rate or the output of your backpack sprayer by:

- 1) Accurately measure and mark a test area in the field. For example, a 50 square metre area.
- 2) Pump up pressure on the backpack sprayer and begin spraying over the measured test area, while maintaining a steady, uniform walking speed and a steady pumping pace, ensuring you are covering the ground evenly with spray and keeping the height of the nozzle at the same distance above the ground. (Variation in speed and pumping pressure will change the output)
- 3) Track the amount of time it takes you to spray the area you have marked out.
- 4) Accurately measure the amount of water required to refill the tank by spraying water from your backpack into a container for the same period of time it took you to spray the measured area. (Ensure you maintain constant pump pressure)
- 6) Calibrate the sprayer delivery rate (output) by using the following formula to find the correct amount of herbicide to measure into your backpack.

$$\text{Sprayer Delivery Rate (L/ha)} = \frac{\text{Litres used in test} \times 10,000}{\text{Test area (50 square metres)}}$$

$$\frac{10 \text{ m} \times 10,000 \text{ m}^2}{5 \text{ m}} = \frac{\quad}{50 \text{ m}^2} = \quad \text{L/ha}$$

Secondly, calculate the area that can be treated with a full tank.

$$\text{Area sprayed by 1 tank} = \frac{\text{Volume of spray mixture in tank (capacity in litres)}}{\text{Sprayer Delivery Rate (Litres per hectare)}}$$

$$\frac{\text{L}}{\text{L/ha}} = \quad \text{ha.}$$

Thirdly, calculate the amount of herbicide to add to the backpack sprayer tank as follows:

$$\text{Amount of herbicide to add to tank} = \text{application rate of herbicide (Litres per hectare)} \times \text{area sprayed by one tank}$$

$$\text{Amount of product to add to tank} = \quad \text{rate (L/ha)} \times \quad \text{ha.} = \quad \text{litres or} \quad \text{millilitres}$$

To convert Litres to millilitres, multiply x 1000

Appendix III Notice of Herbicide Use

NOTICE of HERBICIDE USE

Teck Coal Limited – Invasive Plant Management Program

This area was treated on: _____ Time: _____

Invasive plants controlled: _____

Product used:

- | | |
|---|---|
| <input type="checkbox"/> Milestone (PCP# 28517) | <input type="checkbox"/> Clearview (PCP# 29752) |
| <input type="checkbox"/> Tordon 22K (PCP# 9005) | <input type="checkbox"/> Other _____ |

PRECAUTIONS:

- People and pets to avoid area until dry.
- Avoid skin contact with treated vegetation for 24hrs following application.

PMP Confirmation #

Teck Feedback Line – 1-855-806-6854



Do not remove this sign for 14 days hours following application