ConocoPhillips Canada

DRAFT Pest Management Plan

British Columbia Operations

CPC-IVMP-2026-2031

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Executive Summary

This Integrated Vegetation Management Plan (IVMP) describes the ConocoPhillips Canada Resources Corp. (ConocoPhillips) vegetation management program for its British Columbia operations and is being posted publicly under the title "Pest Management Plan" to comply with wording in the Integrated Pest Management Regulation (2025). This plan covers properties which are owned or controlled by ConocoPhillips, including oil and gas wells, access roads, associated production facilities, pipelines, and gas processing plants.

The IVMP outlines practices for non-chemical and chemical management options and describes the process that ConocoPhillips will use to determine the most appropriate method(s) for vegetation management.

All integrated vegetation management activities will be conducted in a way that minimizes the risk to the workers, the public, and the environment and comply with all provisions of the BC Integrated Pest Management Act (2009).

A) Identifying Information

Geographic boundary description

- Peace River Regional District (see Appendix A)
- Northern Rockies Regional District (see Appendix B)

Person responsible for managing pests on the lands described above

Robert Albricht
Sr. Coordinator, Environmental Operations
ConocoPhillips Canada PO Box 2566
Station M
Calgary, AB
T2P 2H7
Tel: (403) 233-4000
Email: *RegulatoryAffairs@ConocoPhillips.com*

Pest Management Plan principal contact

Robert Albricht
Sr. Coordinator, Environmental Operations
ConocoPhillips Canada PO Box 2566
Station M
Calgary, AB
T2P 2H7
Tel: (403) 233-4000
Email: *RegulatoryAffairs@ConocoPhillips.com*

B) Vegetation Management Goal

ConocoPhillips' goal is to manage vegetation in accordance with regulatory requirements, community expectations, and safety standards to ensure the well-being of our employees, contractors, and the public. Vegetation will be managed in a manner that is consistent with regulatory requirements and commitments documented during ConocoPhillips' engagement with Indigenous Communities, Landowners, and Crown Rights Holders.

C) Definitions

1. **Weed:** a weed is any plant growing somewhere it is not wanted, or it is an unwanted plant because of some undesirable quality.

2. **Nuisance Weeds:** a nuisance weed is any plant considered a general annoyance or weed in a specific context (e.g., a dandelion on a lawn). No specific legal obligation is attached to this term.

3. **Invasive Weeds:** plant species are considered invasive if they have been introduced into an environment where they did not evolve. As a result, they usually have no natural enemies to limit their reproduction and spread.

4. **Noxious Weeds:** a noxious weed is any plant designated as such under the Provincial Weed Act.

5. **Growing day:** a growing day is one day on which plants can grow.

D) Pest Management Plan Elements

1.0 Pest Prevention Program

1.1) To prevent the introduction of weeds, only certified seed will be used when seeding industrial sites and right of ways.

1.2) To prevent weeds from being introduced, topsoil, gravel and other materials will be procured from sources that have negligible or no weed content.

1.3) To prevent the spread of weeds, areas surrounding industrial pads which may be susceptible to weed infestations will be revegetated with ecologically suitable species,consistent with site restoration plans developed in accordance with the BCER's Ecologically Suitable Species Guideline, and in consultation with First Nations and Private Landowners, as applicable. This approach establishes competition for any weeds that may be present or subsequently introduced.

1.4) All sites will undergo a weed inspection on a regular basis to prevent the spread and proliferation of weeds.

2.0 Pest Identification

The following vegetation is considered a pest for the purpose of this Pest Management Plan:

2.1) All vegetation found on industrial pads where facilities and equipment are located.

2.2) Brush growth in areas immediately surrounding industrial pads where facilities and equipment are present, and on road right-of-ways where vegetation removal is required to maintain safe operation of the road.

2.3) Nuisance weeds such as dandelions and stinkweed if significant and increasing populations are present.

2.4) All noxious weeds, both provincial and regional, as defined in the *Provincial Weed Control Act*.

Weeds designated as **Noxious:**

Regulation: Provincially Noxious

- Bur Chervil (Anthriscus caucalis)
- Common Reed (Phragmites australis subsp. australis)
- Cordgrass, Dense-flowered (Spartina densiflora)
- Cordgrass, English (Spartina anglica)
- Cordgrass, Saltmeadow (Spartina patens)
- Cordgrass, Smooth (Spartina alterniflora)
- Common Crupina (Crupina vulgaris) Dodder (Cuscuta spp.)
- Flowering Rush (Butomus umbellatus)
- Garlic Mustard (Alliaria petiolata)
- Giant Hogweed (Heracleum mantegazzianum)
- Giant Mannagrass/Reed Sweetgrass (Glyceria maxima)
- Gorse (Ulex europaeus)
- Hound's-tongue (Cynoglossum officinale)
- Jointed Goatgrass (Aegilops cylindrica)
- Knapweed, Diffuse (Centaurea diffusa)
- Knapweed, Spotted (Centaurea stoebe)
- Knotweed, Bohemian (Fallopia x bohemica)
- Knotweed, Giant (Fallopia sachalinensis)
- Knotweed, Himalayan (Polygonum polystachyum)
- Knotweed, Japanese (Fallopia japonica)
- Leafy Spurge (Euphorbia esula)
- North Africa Grass (Ventenata dubia)
- Nutsedge, Purple (Cyperus rotundus)
- Nutsedge, Yellow (Cyperus esculentus)
- Purple Loosestrife (Lythrum salicaria)
- Rush Skeletonweed (Chondrilla juncea)
- Scentless Chamomile (Matricaria maritima)

- Sow-thistle, Annual (Sonchus oleraceus)
- Sow-thistle, Perennial (Sonchus arvensis)
- Tansy Ragwort (Senecio jacobaea)
- Thistle, Canada (Cirsium arvense)
- Thistle, Milk (Silybum marianum)
- Toadflax, Common / Yellow (Linaria vulgaris)
- Toadflax, Dalmatian (Linaria genistifolia)
- Velvetleaf (Abutilon theophrasti)
- Wild Oats (Avena fatua)
- Yellow Flag Iris (Iris pseudacorus)
- Yellow Starthistle (Centaurea solstitialis)

Regulation: Regionally Noxious

- Blueweed (Echium vulgare) – Cariboo, Central Kootenay, Columbia-Shuswap, East Kootenay, Okanagan-Similkameen, Thompson-Nicola
- Burdock (Arctium spp.) – Bulkley-Nechako, Cariboo, Columbia-Shuswap, Fraser-Fort George, Kitimat-Stikine, North Okanagan, Okanagan-Similkameen, Peace River, Thompson-Nicola Cleavers (Galium aparine) – Peace River
- Common Bugloss (Anchusa officinalis) – Kootenay-Boundary
- Common Tansy (Tanacetum vulgare) – Bulkley-Nechako, Central Kootenay, Columbia-Shuswap, East Kootenay, North Okanagan
- Field Scabious (Knautia arvensis) – Bulkley-Nechako, Kootenay-Boundary, Thompson-Nicola Green Foxtail (Setaria viridis) – Peace River
- Hawkweed, Orange (Hieracium aurantiacum) - Bulkley-Nechako, Cariboo, Central Kootenay, Columbia-Shuswap, East Kootenay, Thompson-Nicola
- Hoary Alyssum (Berteroa incana) - Kootenay-Boundary
- Hoary Cress (Cardaria spp.) - Columbia-Shuswap, North Okanagan, Thompson-Nicola Knapweed, Meadow (Centaurea pratensis) - Columbia-Shuswap
- Knapweed, Russian (Acroptilon repens) - North Okanagan Kochia (Kochia scoparia) - Peace River
- Night-Flowering Catchfly (Silene noctiflora) - Peace River
- Oxeye Daisy (Chrysanthemum leucanthemum) – Cariboo, North Okanagan, Peace River, Thompson-Nicola
- Perennial Pepperweed (Lepidium latifolium) – East Kootenay, Thompson-Nicola
- Puncturevine (Tribulus terrestris) – Okanagan-Similkameen
- Quackgrass (Agropyron repens) – Peace River
- Sulphur Cinquefoil (Potentilla recta) – Columbia-Shuswap, North-Okanagan, Okanagan-Similkameen, Thompson-Nicola
- Thistle, Marsh Plume (Cirsium palustre) – Bulkley-Nechako, Fraser-Fort George
- Thistle, Plumeless (Carduus acanthoides) – Central Kootenay
- Thistle, Russian (Salsola kali) – Peace River
- Thistle, Scotch (Onopordum acanthium) – North Okanagan

- White Cockle (Silene latifolia) – Peace River
- Wild Chervil (Anthriscus sylvestris) – Fraser Valley
- Wild Mustard (Sinapsis arvensis) – Peace River

3.0 Pretreatment Monitoring Program

3.1) Monitoring Methods

The monitoring method used will be visual inspection of the site including vegetation both onsite and immediately offsite. Monitoring may be documented using methods such as ArcGIS Survey123, and all collected data will be stored in the company's internal tracking system. The information gathered will be used to assess whether any action is needed.

Sites will be inspected by personnel up to two times in a growing season. The first inspection will take place relatively early in the season and the second inspection will take place toward the end of the growing season.

3.2) Data Collected for Pest Population Assessment:

Site location description and date will be documented for each inspection. Vegetation observations will be documented for each specific area on the site as described in 3.1.

Areas can generally be broken down into three categories:

a) Pad where equipment and facilities are located or have been located, but have not yet been reclaimed
b) Area immediately surrounding the pad.
c) Road access or pipeline right of way.

Vegetation data documented for each area will consist of the following:

a) Vegetation type:
    i) non-noxious grass
    ii) non-noxious broadleaf plant
    iii) brush and saplings (coniferous / deciduous)
    iv) noxious weeds (individual identification)

b) Vegetation density:
    i) very dense
    ii) variable density
    iii) intermittent
    iv) a few plants
    v) none

c) Vegetation stage:

i) Seedling
ii) flag leaf or bud stage
iii) headed or flower stage
iv) mature seed stage
v) for brush and saplings, indicate height

Data collected for assessing environmental conditions prior to and during pest treatment operation:

a) Distance between site and any water bodies in immediate vicinity. Water bodies include:

i) water in rivers, streams or creeks
ii) water in lakes, marshes or sloughs
iii) marine or estuarine water
iv) water in a ditch (does not include man-made self-contained water bodies such as dugouts or other industrial runoff structures, such as storm water ponds, that are isolated from surrounding aquatic systems)

b) Existing soil erosion or areas subject to soil erosion on site.

c) Damaged vegetation on site or located off site in area immediately surrounding the site.

4.0 Pest Treatment Thresholds

Treatment thresholds will be considered for each of the distinct areas on site. These areas consist of the pad area where industrial facilities and equipment exist, the area on site immediately surrounding the pad area, and pipeline and road access right of ways.

4.1) Pad Areas Where Industrial Facilities and Equipment Exist

Treatment Threshold Rationale

a) Fire hazards are high in this area of the site.

b) This area of the site is usually graveled with no vegetation present. Erosion risk is usually negligible.

c) The BC Energy Regulator (BCER) requires that the area immediately surrounding processing facilities and equipment be sufficiently free of vegetation and combustible materials.

Threshold Regulations

Section 47 of the *Drilling and Production Regulations* requires that sufficient areas beneath and around flare stacks be free of combustible materials and vegetation.

Section 50(2) of the *Drilling and Production Regulations* requires that any dike or fire wall is maintained in good condition and the area encompassed by it is kept free from grass, weeds or other combustible materials

Section 9.6.15 of the *Oil and Gas Activity Manual* requires that a sufficient area beneath and around flare stacks must be cleared of flammable materials and vegetation.

The recommended blackened area beneath and around a flare stack is 1.5 times the stack height to a minimum of 10 meters in cultivated areas and 30 meters in forested areas, unless conditions support a lesser distance.

Treatment Thresholds

a) Non-noxious grass is removed if there are a few plants or density is considered intermittent.

b) Non-noxious broadleaf plants are removed if there are a few plants or density is considered intermittent.

c) Brush and saplings are removed if any plant population exists.

d) Noxious weeds as defined by the Provincial Weed Act will be removed if any plant population exists.

4.2) Area on Site Immediately Surrounding the Pad Area

Treatment Threshold Rationale

This area of the site may have been seeded to grass, reflective of historic reclamation practices, or rolled back and left for natural regeneration in alignment with current restoration practices to reduce erosion risk, weed growth, and promote wildlife habitat.

a) Offsite vegetation is a consideration as this area is typically on the outer perimeter of the site.

b) Consideration will be given to whether the site is in an agricultural area or not.

c) Consideration will be given to the site's visibility and frequency of visits.

Treatment Thresholds

a) Non-noxious, ecologically suitable species representative of the adjacent plant community is the desired vegetation. Under normal circumstances this vegetation will not be removed at any threshold.

b) Non-noxious broadleaf plants will normally not be removed at any threshold unless any of the following conditions exist:

   i) If the density of these plants is considered very dense or of variable density and nuisance weeds are included in this population and the site is in an agricultural area.

c) Brush and saplings may be removed if fire hazard assessments identify the need to remove combustible materials adjacent to the pad.

d) Noxious weeds as defined by the Provincial Weed Act will be removed if any noxious plant population is observed to be increasing and/or spreading and not sufficiently controlled by native plants in areas where native plant establishment is the prime method of weed control.

4.3) Pipeline and Road Access Right of Ways

Treatment Threshold Rationale

a) Consideration must be given to visibility on access road right of ways.

b) Consideration will be given to whether the site is in an agricultural area or not.

c) This area of the site may have been seeded to grass, reflective of historic reclamation practices, or rolled back and left for natural regeneration in alignment with current restoration practices to reduce erosion risk, weed growth, and promote wildlife habitat.

Treatment Thresholds

a) Non-noxious ecologically suitable species representative of the adjacent plant community is the desired vegetation.

b) Non-noxious broadleaf plants will normally not be removed at any threshold unless any of the following conditions exist:

   i) If the density of these plants is considered very dense or of variable density and nuisance weeds are included in this population and the site is in an agricultural area.

c) Brush and saplings on road right of ways will normally be removed if it is located within approximately five meters of the road and when densities are considered intermittent and plants exceed two meters in height.

d) Brush and saplings on pipeline right of ways under normal circumstances will not be removed at any population threshold.

e) Noxious weeds as defined by the Provincial Weed Act will be removed if any noxious plant is observed to be increasing and/or spreading and not sufficiently controlled by native plants in areas where native plant establishment is the prime method of weed control.

5.0 Pest Treatment Options

5.1) Treatment Options

a) Mowing and Trimming

This method involves mechanically cutting the vegetation utilizing:

   i) handheld trimmers

   ii) heavy duty mowers

   iii) heavy duty brush mowers

iv) power saw

b) Cultivation

This method consists of mechanically cultivating or tilling the soil to slow or kill vegetation growth.

c) Hand picking and pulling vegetation

This method consists of manually picking buds from vegetation to prevent further proliferation or removing vegetation by manually pulling whole plants.

d) Spot foliar herbicide application

This method involves applying herbicides directly to individual undesirable plants.

e) General foliar herbicide application

This method involves applying herbicides over an entire area.

f) Establishing competing species

This method involves establishing locally common species in a selected area to out-compete undesirable plant populations.

5.2) Treatment Option Advantages and Limitations:

a) Mowing and Trimming

Advantages:

i) This method can be used in areas where herbicide application is not an option due to vegetation height, environmental conditions, or area of sensitivity.

ii) Mowing and trimming reduces the height of the vegetation which can immediately improve visibility, aesthetics, and fire hazard rating.

iii) Mowing and trimming can reduce the spread and proliferation of noxious weeds if cutting takes place before the plants set seed.

iv) This method does not disturb the soil and does not remove the plants and consequently does not increase the risk of soil erosion.

v) Approved treatment method within the HV1 C Gundy Complex, as outlined in ConocoPhillips' Environmental Management Plan.

Limitations:

i) Mowing and trimming only reduces the height of the vegetation and does not kill or remove it. As a result, it is not as effective as other treatment options in areas that are to be kept free of all vegetation.

ii) Mowing and trimming does not kill or remove perennial noxious weeds.

iii) Mowers are usually mounted on equipment that is heavy and thus cannot travel in wet soft conditions.

b) Cultivation

Advantages:

i) This method can be used in areas where herbicide application is not an option due to environmental considerations or area of sensitivity.

ii) Cultivation works well prior to seeding a site with desired vegetation, as along with killing existing vegetation, it also prepares an optimal seed bed.

iii) Cultivation immediately reduces fire hazard as plant material is buried and mixed into soil.

iv) Some specific plant species are very susceptible to cultivation as a means of control.

v) Approved treatment method within the HV1 C Gundy Complex, as outlined in ConocoPhillips' Environmental Management Plan.

Limitations:

i) Cultivation leaves soil prone to erosion.

ii) Cultivation kills all vegetation and consequently is not an option when removing weeds from an area where desirable vegetation is to remain.

iii) Cultivation is not an option on hard rocky terrain or on graveled pads.

iv) Cultivation makes the area susceptible to new growth of dormant seeds, which may not have otherwise been able to germinate because of competition from existing plant cover.

v) The growth of some plant species may be encouraged by cultivation.

c) Hand Pulling and Hand Picking

Advantages:

i) This method can be used in areas where herbicide application is not an option due to environmental considerations or area of sensitivity.

ii) Hand pulling and picking does not negatively affect desired vegetation.

iii) This method does not disturb the soil, leaves desired vegetation intact and consequently does not significantly increase the risk of soil erosion.

iv) This method can be very cost effective if very few plants are removed.

v) Approved treatment method within the HV1 C Gundy Complex, as outlined in ConocoPhillips' Environmental Management Plan.

Limitations:

i) This method is very labor intensive and generally not cost effective if more than a few plants are to be removed.

ii) Hand picking may not get all the plants and might leave live plants in place to produce seeds.

iii) Perennials, shrubs and brush have substantial root systems making pulling difficult in circumstances where eliminating the plant is the desired outcome.

d) Spot Foliar Herbicide Application

Advantages:

i) Undesirable vegetation can be selectively removed, without damaging desired vegetation.

ii) By spot applying the correct herbicide, noxious weeds and other persistent types of undesirable vegetation can be killed cost effectively.

iii) By spot applying herbicide directly to weeds, relatively small amounts of herbicide are used resulting in minimal risk to non-target vegetation species and offsite vegetation and ensures a low probability of herbicide leaching and runoff.

iv) Spraying equipment can be configured to work effectively on soft or wet ground which reduces compaction, rutting and general disturbance of the soil.

v) This method does not disturb the soil, leaves desired vegetation intact and consequently does not significantly increase the risk of soil erosion.

Limitations:

i) The possibility exists for environmental damage resulting from spills, and improper use.

ii) Environmental restrictions due to the risk of off-target damage may exclude herbicide application as a vegetation control option in some cases.

iii) Successful herbicide application results depend on several environmental factors that are beyond the vegetation manager's control. Excessive wind, precipitation, and frost conditions are some environmental conditions that may in some cases exclude herbicide application as an option to correct a vegetation problem on a timely basis.

iv) Herbicide applications cannot be made within ten meters of a body of water. A buffer zone will also be required in excess of the ten-meter limitation and will vary in distance depending on environmental conditions, the method of application, and the herbicide used.

v) When significant weed populations are encountered, spot herbicide applications are not cost effective and can result in poor weed coverage.

vi) ConocoPhillips' HV1 C Gundy Complex Environmental Management Plan prohibits the use of herbicide or chemical weed control within the HV1 C Gundy Complex boundaries.

e) General Foliar Herbicide Application

Advantages:

i) Where moderate or significant weed infestations exist, excellent weed control can be achieved with general herbicide application.

ii) Herbicide control can be either selective or non-selective.

iii) Herbicide application is typically the least expensive form of vegetation control.

iv) When selective herbicides are used, desired vegetation is not damaged, and the soil is not disturbed. This results in a reduced risk of erosion and leaves the soil less receptive to new weed development.

v) Non-selective herbicides can be used effectively to remove all vegetation from areas where due to rocky or hard conditions, cultivation is not possible.

Limitations:

i) The possibility exists for environmental damage resulting from spills, and improper use.

ii) Environmental restrictions due to the risk of off-target damage may exclude herbicide application as a vegetation control option in some cases.

iii) Successful herbicide application results depend on several environmental factors that are beyond the vegetation manager's control. Excessive wind, precipitation, and frost conditions are some environmental conditions that may in some cases exclude herbicide application as an option to correct a vegetation problem on a timely basis.

iv) Herbicide applications cannot be made within ten meters of a body of water. A buffer zone will also be required in excess of the ten-meter limitation and will vary in distance depending on environmental conditions, the method of application, and the herbicide used.

v) Where weed infestations are relatively small or scattered, general foliar herbicide applications are often less cost effective than spot foliar herbicide application and poses a greater offsite environmental risk than spot foliar herbicide application.

vi) ConocoPhillips' HV1 C Gundy Complex Environmental Management Plan prohibits the use of herbicide or chemical weed control within the HV1 C Gundy Complex boundaries.

f) Remotely Piloted Aircraft Systems (RPAS) or Drone Herbicide Application

Advantages:

i) Ability to access areas that are difficult or impossible to reach with ground machinery.

ii) Improve safety by eliminating the risk of navigating difficult terrain.

iii) Significantly reduce environmental impact compared to traditional methods.

iv) RPAS may be used to monitor noxious weeds by identifying, mapping, and tracking infestations, enabling targeted treatment and data-driven management strategies.

Limitations:

i) At this time, regulatory approvals are in process and currently there are limited herbicides approved for RPAS spraying.

ii) ConocoPhillips' HV1 C Gundy Complex Environmental Management Plan prohibits the use of herbicide or chemical weed control within the HV1 C Gundy Complex boundaries.

g) Establishing Competing Species

Advantages:

i) Where moderate infestations of undesirable plant species exist, seeding, or specific site treatments, can promote a healthy population of desirable vegetation which can outcompete undesireable plants.

ii) Establishing competing vegetation does not have potential for offsite damage to neighboring vegetation. Certified clean seed must be used to prevent additional undesirable plants from coming in with the new seed.

iii) Establishing competing vegetation can be economical and is a very low risk activity for workers and the public.

iv) Approved treatment method within the HV1 C Gundy Complex, as outlined in ConocoPhillips' Environmental Management Plan.

Limitations:

i) Establishing competing species is not a quick solution to noxious weed problems, as it takes time for the new plants to choke out the undesirable plant population.

ii) It may be necessary to use an herbicide treatment in combination with plant establishment to get optimal results.

5.3) Treatment Method Decision Methodology

A treatment method will be provided for the three main areas of a gas/oil processing site. Consideration will be given to vegetation goal, factors that affect the treatment method decision, and an analysis of the resulting treatment options.

a) Pad where equipment and facilities are located

Vegetation goal:

Area must be kept clear of all vegetation.

Factors affecting treatment decision:

- Density of the vegetation.
- Stage of growth of the vegetation.
- Vegetation type.
- Distance to water bodies in the vicinity.
- Type of offsite vegetation.
- Distance to offsite vegetation.
- Current weather conditions.
- Possible specific environmental restrictions for the site.

Treatment options:

i) *General foliar herbicide application*

This treatment option will normally be chosen if the following conditions are present:

- The vegetation is of variable density or very dense.
- The vegetation is immature enough to allow herbicide uptake. (Pre mature seed stage)
- The vegetation type will respond to herbicide.
- The distance to the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.
- There are no sensitive areas that would exclude this option.

ii) *Spot foliar herbicide application*

This treatment option will normally be chosen if the following conditions are present:

- The vegetation consists of a few plants or is intermittent.
- The vegetation is immature enough to allow herbicide uptake *(pre-mature seed stage).*

- The vegetation type will respond to herbicide.
- The distance between the closest plants where herbicide will be applied and the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.
- There are no sensitive areas that would exclude this option.

iii) Hand pulling and hand picking

This treatment option will normally be chosen if the vegetation consists of a few plants and any of the following conditions are present:

- There are environmental restrictions that prevent herbicide application.
- There are areas of sensitivity that prevent herbicide application.
- The distance between the plants that require treatment, and the nearest water body is less than minimum distances with consideration to current weather conditions.
- The vegetation stage will not allow for effective herbicide application. (Post mature seed stage)
- The current weather conditions are not conducive to safe, effective herbicide application.

iv) Mowing

This treatment option will normally be chosen if the vegetation is very dense or of variable density and any of the following conditions are present:

- There are environmental restrictions that prevent herbicide application.
- There are areas of sensitivity that prevent herbicide application.
- The distance between the plants that require treatment, and the nearest water body is less than minimum distances with consideration to current weather conditions.
- The vegetation stage will not allow for effective herbicide application.
- Previously sprayed vegetation is dead but remains intact within the desired vegetation free zone. This vegetation should be cut down.

v) Cultivation

This treatment method will not normally be an option as the pads are too hard and rocky to cultivate.

vi) Establishing competing species

This treatment option will not be used on a pad area, as the desired result is to be vegetation free.

b) Area immediately surrounding pad

Vegetation goal:

To establish and maintain the growth of ecologically suitable species that are consistent with the site restoration plan and suppress or eliminate noxious weeds. Factors affecting treatment decision:

- Density of the vegetation.
- Stage of growth of the vegetation.
- Vegetation types are both desired and undesired.
- Distance to water bodies in the vicinity.
- Type of offsite vegetation.
- Distance to offsite vegetation.
- Current weather conditions.
- Possible specific environmental restrictions for the site.
- Possible specific sensitive areas that would exclude this option.

Treatment options:

i) General foliar herbicide application

This treatment option will normally be chosen if the following conditions are present:

- The undesired vegetation exceeds treatment thresholds and is of variable density or very dense.
- The vegetation is immature enough to allow herbicide uptake *(pre-mature seed stage)*.
- The vegetation type will respond to herbicide.
- The distance to the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.

- There are no specific sensitive areas that would exclude this option.
- The herbicide selected will not damage desired vegetation.

ii) Spot foliar herbicide application

This treatment option will normally be chosen if the following conditions are present:

- The undesired vegetation exceeds treatment thresholds and consists of a few plants or is intermittent.
- The vegetation is immature enough to allow herbicide uptake *(pre-mature seed stage)*.
- The vegetation type will respond to herbicide.
- The distance between the closest plants where herbicide will be applied and the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.
- There are no specific sensitive areas that would exclude this option.
- The herbicide selected will not damage desired vegetation.

iii) Hand pulling and hand picking

This treatment option will normally be chosen if the undesirable vegetation consists of a few plants and any of the following conditions are present:

- There are environmental restrictions that prevent herbicide application.
- There are specific sensitive areas that prevent herbicide application.
- The distance between the plants that require treatment, and the nearest water body is less than minimum distances with consideration to current weather conditions.
- The vegetation stage will not allow for effective herbicide application *(post-mature seed stage)*.
- The current weather conditions are not conducive to safe, effective herbicide application.

iv) Mowing

This treatment option will normally be chosen if the vegetation is very dense or of variable density and any of the following conditions are present:

- There are environmental restrictions that prevent herbicide application.
- There are specific sensitive areas that prevent herbicide application.
- The distance between the plants that require treatment, and the nearest water body is less than minimum distances with consideration to current weather conditions.
- The vegetation stage will not allow for effective herbicide application.
- Weed thresholds are not exceeded, but it is desirable to trim vegetation for fire hazard reasons.

v) Cultivation

This treatment option will normally be chosen if the area has no desirable vegetation, the soil is conducive to cultivation and any of the following conditions are present:

- A seed bed is being prepared to establish the desired vegetation in the area.
- Weed thresholds are exceeded and there are environmental restrictions or considerations that prevent herbicide application, and the area is not prone to soil erosion.

vi) Establishing competing species

This treatment option will normally be chosen if the following conditions are present:

- In combination with spraying or cultivation methods, or to fill in areas where desirable species of vegetation have not taken hold.
- If sensitivities exist that do not allow for chemical or mechanical treatment methods.

c) Road Access or Pipeline Right of Way

Vegetation goal:

To establish and maintain the growth of ecologically suitable species that is consistent with the site restoration plan and suppress or eliminate noxious weeds.

Additionally, vegetation within five meters of a road must be managed to maintain line of sight for the safe operation and use of the road.

Factors affecting treatment decision:

- Density of the vegetation.
- Stage of growth of the vegetation.
- Vegetation types, both desired and undesired.
- Distance to water bodies in the vicinity.

- Type of offsite vegetation.
- Distance to offsite vegetation.
- Current weather conditions.
- Possible specific environmental restrictions for the site.
- Possible specific sensitive areas that would exclude this option.

Treatment options:

i) Mowing

This treatment option will normally be chosen if any of the following conditions are present on road access right of ways:

- Shrub and tree densities exceed treatment thresholds.
- Non shrub/tree nuisance weeds exceed treatment thresholds and there are environmental restrictions or conditions that prevent herbicide application.
- Noxious weed densities are of variable density or very dense and there are environmental restrictions or conditions that prevent herbicide application.
- Weed thresholds are not exceeded, but it is desirable to trim vegetation for fire hazard reasons.

ii) General foliar herbicide application

This treatment option will normally be chosen if all the following conditions are present:

- The undesired vegetation consists of nuisance or noxious weeds, exceed treatment thresholds and are of variable density or very dense.
- The vegetation is immature enough to allow herbicide uptake. (premature seed stage)
- The vegetation type will respond to herbicide.
- The distance to the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.
- There are no specific sensitive areas that would exclude this option.
- The herbicide selected will not damage desirable vegetation.

iii) Spot foliar herbicide application

This treatment option will normally be chosen if all the following conditions are present:

- The undesired vegetation consists of nuisance or noxious weeds, exceed treatment thresholds and consist of a few plants or is of intermittent density.
- The vegetation is immature enough to allow herbicide uptake *(pre-mature seed stage)*.
- The vegetation type will respond to herbicide.
- The distance between the closest plants where herbicide will be applied and the nearest water body exceeds minimum distances with consideration to current weather conditions.
- The application will not affect offsite vegetation given the type of offsite vegetation and distance to offsite vegetation.
- The current weather conditions are conducive to safe, effective herbicide application.
- There are no environmental restrictions that would exclude this option.
- There are no specific sensitive areas that would exclude this option.
- The herbicide selected will not damage desirable vegetation.

iv) Hand pulling and hand picking

This treatment option will normally be chosen if the undesirable vegetation consists of noxious weeds with a density consisting of a few plants and any of the following conditions are present:

- There are environmental restrictions that prevent herbicide application.
- There are specific sensitive areas that prevent herbicide application.
- The distance between the plants that require treatment, and the nearest water body is less than minimum distances with consideration to current weather conditions.
- The vegetation stage will not allow for effective herbicide application *(post-mature seed stage)*.
- The current weather conditions are not conducive to safe, effective herbicide application.

v) Cultivation

This treatment option will normally be chosen if the area has no desirable vegetation, the soil is conducive to cultivation and any of the following conditions are present:

- A seedbed is being prepared to establish the desired vegetation in the area.

- Weed thresholds are exceeded and the area consists of pipeline right of way on farmland.
- Weed thresholds are exceeded and there are environmental restrictions or considerations that prevent herbicide application, and the area is not prone to soil erosion.

vi) Establishing competing species

This treatment option will normally be chosen if the following conditions are present:

- In combination with spraying or cultivation methods, or to fill in areas where desirable species of vegetation have not taken hold.
- If sensitivities exist that do not allow for chemical or mechanical treatment methods.

6.0 Post Treatment Monitoring Program

6.1) Monitoring Methods

The monitoring method used will be visual inspection of the site including vegetation both onsite and immediately offsite.

6.2) Monitoring Frequency

Post treatment monitoring may take place in growing season during scheduled visits by personnel. The first inspection will take place relatively early in the season and a second inspection will take place toward the end of growing season. If a vegetation treatment takes place during the second visit within a season or only one visit is made, the related post treatment monitoring will take place during the first visit in the following season.

Additional visits may be completed upon notification of an issue by ConocoPhillips personnel or a regulatory body.

6.3) Post Treatment Data

Effects on pest populations:

i) Site location description and date will be documented for each inspection.

ii) Data describing vegetation type, density and stage will be recorded for each specific area of the site consistent with pretreatment data.

Effects on environment and non-target vegetation:

i) Any soil erosion on site will be documented.

ii) Damaged onsite vegetation will be documented.

iii) Damaged offsite vegetation in the area immediately adjacent to the site will be documented.

E) Operational Information

1.0) Herbicide Handling Procedures

1.1) Herbicide Transportation Procedures

a) Safety Data Sheets (SDS) must accompany all herbicides in transport and personnel directly responsible for transport must be familiar with SDS contents.

b) Containers will be stored in containment storage sufficient to hold the herbicide contents in the event of leakage or a spill.

c) Herbicides will not be stored with food, feed, consumer goods or in a vehicle cab.

d) Herbicide containers must be secured to prevent accidental spillage or possible loss from vehicles.

e) Vehicles transporting herbicides will carry a spill clean-up kit consisting of a shovel, pail and absorbent material.

f) If for any reason herbicide is stored in a container other than its original, the replacement container must be labeled with the herbicide Pest Control Product (PCP) registration number.

1.2) Herbicide Storage Procedures

a) Herbicides will be stored in a facility separated from work and living areas.

b) Herbicides will not be stored with food, feed, or consumer goods.

c) Herbicide will be stored in a structure that will contain any spills or leakage.

d) The local fire department will be informed of the location of storage facilities and the quantities of herbicides in storage.

e) Entrances to storage facilities will be locked and will bear a warning sign indicating chemical storage, authorized personnel only.

f) Storage facilities will be adequately vented.

g) Herbicides will be stored in their original labeled container.

h) If for any reason herbicide is stored in a container other than its original, the replacement container must be labeled with the herbicide PCP number.

i) Emergency phone numbers will be posted near the storage facility.

j) First aid kit and spill cleanup equipment will be provided near the storage facility.

1.3) Herbicide Mixing and Loading Procedures

a) The applicator must read the herbicide label before mixing and loading herbicides.

b) Protective clothing must be worn when mixing and loading. Coveralls, rubber boots, herbicide resistant gloves, goggles, and a chemical resistant apron must be worn. Additional protective clothing will be worn as required by the herbicide label.

c) During mixing and loading, emergency wash facilities, eye wash equipment, first aid equipment, spill cleanup equipment, herbicide SDS, and emergency phone numbers must be on hand.

d) Herbicides will be mixed and loaded in good light, with adequate ventilation.

e) Herbicide contamination of the water source will be prevented by the following procedures:

   i) An air gap will be maintained between the supply line and the tank contents.

   ii) Trained personnel must continuously observe the loading process to ensure the air gap is maintained.

   iii) When loading a closed system, a backflow prevention device must be installed to prevent contamination of the water source.

f) Herbicide containers will be triple rinsed, or pressure rinsed with rinsate added to the spray solution.

1.4) Applying Herbicides

a) Before applying herbicides, applicators must be aware of the label instructions.

b) Equipment must be inspected prior to application to ensure it is free from leaks, and in good working order.

c) Appropriate personal protective equipment must be worn during application. Label directions are to be followed.

d) First aid equipment, eye wash equipment, emergency phone numbers, herbicide SDS and spill equipment must be on hand during application.

e) Before applying herbicides, personnel will post appropriate signs at area entrances warning unprotected workers and bystanders.

f) Herbicide application rates will not exceed label rates.

g) Harvesting and grazing withdrawal periods if applicable will be adhered to.

h) Herbicide drift will be minimized by taking the following precautions.

   i) Spray solution will be applied as close to the ground as possible using a slow speed application method.

   ii) Large droplet low pressure nozzles will be used to minimize drift.

   iii) A drift reduction agent will be used when necessary to reduce drift.

   iv) Application will stop when wind causes significant drift or drift to offsite vegetation.

1.5) Disposing of Herbicide Containers and Unused Herbicides

a) Prior to disposal, herbicide containers will be triple rinsed, or pressure rinsed.

b) Herbicide rinsate will be used in the spray solution.

c) Herbicide containers will be disposed of by returning to the manufacturer for recycling if possible or at an approved sanitary landfill for disposal.

d) Unused herbicides will be returned to the manufacturer. If returning the herbicide is not possible, it will be taken to a hazardous waste company for disposal.

1.6) Herbicide Spill Response Procedures

a) Spill equipment and information will be present during mixing, loading, transporting, and applying herbicides. Equipment and information will include:

   i) SDS for each herbicide.

   ii) Emergency phone numbers including the Provincial Environment Emergency number.

   iii) Spill contingency plan.

   iv) Personal protective equipment including rubber boots, herbicide resistant gloves, goggles, coveralls, herbicide resistant apron, and a respirator.

   v) First aid kit.

   vi) Eye wash equipment.

   vii) Fresh water washing station.

   viii) Absorbent material.

   ix) Shovel.

   x) Container.

b) In the case of a spill, personnel will perform the following procedures:

   i) Isolate the affected area. Keep all unauthorized people and animals away.

   ii) Put on protective clothing and equipment.

   iii) If possible, stop further leakage or spillage.

   iv) Contain the spread of the spill.

   v) Contact police if the spill involves a public area and there may be a hazard to the public.

   vi) Use absorbent material to soak up spilled herbicide.

   vii) Shovel affected material and soil into container. Label the container.

   viii) Follow all additional label and SDS cleanup and decontamination instructions.

ix) Where a spill releases herbicide into the environment, BC Environment must be contacted. 1-800-663-3456.

2.0) Environmental Protection Strategies and Procedures

2.1) General Protection Strategy

a) A robust weed prevention program will reduce the treatment requirement and the risk of adverse effects on the environment. (see D-1)

b) Weed thresholds will be used to determine if control is required. By using thresholds as opposed to automatic treatment, the risk of adverse effects due to herbicide application will be reduced. (see D-4)

c) Minimizing overall environmental adverse effects is the primary consideration in determining the appropriate method of weed treatment. (see D-5)

2.2) Protection Procedures for Domestic Use and Agriculture Use Water Sources

a) Best management practices as described in section E-1 regarding herbicide transport, storage, mixing and loading, application, and container disposal will provide protection to water sources.

b) Herbicide application will not take place within 30 meters of a water supply intake or well used for domestic or agricultural purposes, including water for livestock or for irrigation of crops.

c) Herbicide will not be applied within ten meters of a body of water. To ensure the ten meter herbicide free zone is maintained, herbicide will not be applied within a minimum of three meters of the ten-meter **herbicide free zone (HFZ).** This secondary buffer zone will be expanded as required depending on wind speed and wind direction. If glyphosate is used, the herbicide free zone may be reduced to two meters from a body of water provided a selective application method is used, or the treatment area is an industrial site that must be free of vegetation. Glyphosate can be applied over a dry ditch provided it does not drain directly into a fish bearing stream, lake or river.

d) Only low or non-residual herbicides that are not susceptible to significant soil movement will be used in general foliar applications.

Definitions:

1. **Herbicide-Free Zone (HFZ):** an area of land that must not be treated with pesticides and must be protected from pesticide moving into it. Pesticide free zones are measured from the high-water mark of any open body of water, and will be measured on a horizontal plane, regardless of the slope of the land.

2. **No-Treatment Zone (NTZ):** an area of land in which herbicide application is prohibited. E.g. HV1 C Gundy Complex
3. **Body of Water:** any naturally occurring body of water, such as streams, rivers, wetlands, or lakes.
4. **Stream:** a watercourse that contains water on a perennial or seasonal basis. It must have a continuous channel bed that is more than 100 meters long, and/or flows directly into a stream or a fish-bearing body of water, or licensed waterworks.
5. **Wetlands:** swamps, marshland, bogs, or similar areas that support natural vegetation, and are distinguishable from adjacent areas.

2.3) Protection Procedures for Fish, Wildlife, Riparian Areas and Wildlife Habitat

a) Best management practices as described in section E-1 regarding herbicide transport, storage, mixing and loading, application, and container disposal will provide protection to wildlife and habitat.

b) When herbicide treatment is required, herbicides low in toxicity will be used whenever feasible.

c) Herbicide will not be applied within ten meters of a body of water. To ensure the ten-meter herbicide free zone is maintained, herbicide will not be applied within a minimum of three meters of the ten-meter herbicide free zone. This secondary buffer zone (NTZ) will be expanded as required depending on wind speed and wind direction.

d) Herbicide will not be applied within 30 meters of a body of water that is known to be or suspected to be fish bearing. If glyphosate is used, the herbicide free zone may be reduced to two meters from a body of water provided a selective application method is used, or the treatment area is an industrial site that must be free of vegetation. Glyphosate can be applied over a dry ditch provided it does not drain directly into a fish bearing stream, lake or river.

e) Only low or non-residual herbicides that are not susceptible to significant soil movement will be used in general foliar applications.

2.4) Procedures to Prevent Herbicide Contamintation of Food Intended for Human Consumption

a) Herbicides will not be stored or transported with food or feed as per sections E-1.1.

b) Measures designed to minimize herbicide drift as per section E-1.4 will prevent off-site contamination of food or feed.

c) Herbicide will not be applied within 30 meters of a garden or a fruit or vegetable crop used directly for human consumption.

d) If herbicide treatment is required in an area that is grazed by cattle or sheep, only herbicides with no grazing or slaughter restrictions will be used.

e) Where herbicide has been applied, signs will be posted at entrances to the treated area warning of the application.

2.5) Procedures to Determine Area Boundaries

a) Locations will be identified by the legal land description. The land description on the site listing will be confirmed on the area map and compared to the sign on the location.

b) Location boundaries will be determined by visual inspection as they are typically easily identified. If the location boundaries on a site are not easily identified, a survey map of the location will be used to determine the boundaries.

c) When location boundaries have been determined, they will be marked with stakes if they are not otherwise easily identifiable.

d) Prior to treatment, consideration will be given to neighboring vegetation, nearby water bodies, and weather conditions. If a herbicide free buffer zone is required, it will be marked with stakes.

2.6) Procedures for Maintaining and Calibrating Herbicide Application Equipment

a) Prior to commencing application operations within a season, herbicide application equipment will be checked to ensure it is free from leaks, in good working order and properly calibrated. Calibration will consist of measuring nozzle output relative to the width and speed of application.

b) Prior to commencing each specific application, application equipment will be visually checked for possible leaks or other malfunction. If equipment is leaking or in otherwise not good working order, repairs will be made to correct the problem before beginning application.

c) To ensure equipment calibration is maintained and accurate application takes place, treatment areas will be measured prior to application and the required herbicide to treat the area will be calculated. After treatment, the actual herbicide used will be compared with the calculated required amount. If the difference exceeds reasonable tolerance, equipment will be recalibrated and application accuracy reviewed.

2.7) Weather Monitoring Procedures

a) Wind speed will be monitored using a wind meter. Wind speed and direction will be noted on the application record.

b) Precipitation will be monitored by visual observation. Precipitation conditions will be noted on the application record.

c) Temperature will be monitored using a thermometer. The temperature will be noted on the application record.

2.8) Strategies for Herbicide Application in Various Weather Conditions

a) The following strategies will be implemented during herbicide application in windy conditions:
   i) Spray solution will be applied as close to the ground as possible using a slow speed application method.
   ii) Large droplet low pressure nozzles will be used to minimize drift.
   iii) Drift reduction agent will be used when necessary to reduce drift.
   iv) Application will stop when wind causes significant drift or drift to offsite vegetation. (In excess of 8km/hr or 16km/hr if shroud is used)

b) Precipitation considerations:
   i) If rain appears imminent, if possible, an herbicide that is rain fast will be used. (Label recommendations will be followed).
   ii) If rain appears imminent, persistent herbicides that are susceptible to leaching will not be used.
   iii) Herbicides will not be applied to soils that are water saturated.
   iv) If rain has left excess moisture on plants, application should be postponed until excess moisture has evaporated or runoff of plants.
   v) Herbicides will not be applied when precipitation is falling.

c) Temperature considerations:
   i) If frost conditions are present, herbicide application will commence only after the frost is melted off the plants and the plants are actively growing.
   ii) In temperatures of 30c or warmer, herbicides with low volatilization thresholds will not be used.

3.0) Herbicide Identification

Please note: *the list of trade names associated with each active ingredient is not exhaustive, and most active ingredients may be the primary ingredient in a herbicide or be a less concentrated second or third ingredient in a herbicide.*

3.01) Chlorsulfuron and Aminocyclopyrachlor

Characteristics

Chlorsulfuron is absorbed by both roots and foliage and is translocated throughout the plant's vascular system. It is considered a low environmental hazard, low mammalian toxicity, and a moderate persistence in soil.

Aminocyclopyrachlor is the active ingredient in several selective herbicides. It can be applied to emerged, actively growing weeds and brush in combination with a surfactant to control brush and broadleaf weeds. The weed and brush species controlled or suppressed are specific to rate.

Application

The two herbicides are often used in combination for broadleaf and woody plant control in pastures, rangelands, and non-crop areas.

Application method and equipment

Chlorsulfuron and Aminocyclopyrachlor may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Chlorsulfuron Aminocyclopyrachlor-based herbicides:

Navius FLEX, Truvist

3.02) Aminopyralid

Characteristics

Aminopyralid is a selective herbicide that kills broadleaf plants and brush. It is somewhat persistent in the soil and can leach if applied to course non-organic soil or gravel. Aminopyralid has been shown to be practically non-toxic to birds, fish, honeybees, earthworms, and aquatic invertebrates. Aminopyralid has moderate acute mammalian toxicity.

Grazing restriction: Aminopyralid has a slaughter restriction of 3 days, and dairy animals should not graze within 7 days of application.

Application

Aminopyralid will be used in grassed areas where broadleaf weeds and brush require selective control. It may also be used for treatment on pads with acceptable drainage, if required to kill broadleaf weeds.

Application method and equipment

Aminopyralid will be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Aminopyralid-based herbicides

Milestone, Clearview, Etc.

3.03) Amitrole

Characteristics

Amitrole is a non-selective post-emergent systemic herbicide that inhibits chlorophyll production. Amitrole has some residual activity and can stay active for approximately 2-4 weeks under warm, moist, soil conditions. The level of residual activity remains dependent on the rate of application.

No grazing restriction.

Application

Amitrole may be used in areas where bare ground is desired, and soil and runoff conditions are such that application is appropriate.

Application method and equipment

Amitrole will be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Amitrol-based herbicides

Amitrol T, etc.

3.04) Bromacil

Characteristics

Bromacil is a non-selective herbicide used for brush control on non-cropland areas. It is especially useful against perennial grasses. It works by interfering with photosynthesis, the process by which plants use sunlight to produce energy. It is absorbed through the roots, and less readily through the leaves. No grazing restriction.

Application

Bromacil may be used in areas where bare ground is desired, and soil and runoff conditions are such that application is appropriate.

Application method and equipment

Bromacil will be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Bromacil-based herbicides

Krovar, Hyvar, Calmix pellets.

3.05) Chlorsulfuron

Characteristics

Chlorsulfuron is useful for the control of hard to manage annual and perennial broadleaf vegetation by both foliar and root uptake. It may be used to spot treat horsetail, as well as other established species not controlled by other herbicides. Chlorsulfuron will not be used as a soil-applied residual herbicide. It is effective at very low application rates. It will not be applied near trees or other desirable plants, in areas where their roots may extend, or in locations where it may be moved or washed into contact with the roots. It will not be applied during extremely rainy periods, when soil has been heavily saturated, or to ground which slopes to desirable plants.

Application

Chlorsulfuron may be used in grassed areas where broadleaf and noxious weeds require selective control.

Application method and equipment

Chlorsulfuron may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Chlorsulfuron-based herbicides

Telar, Truvist

3.06) Clopyralid

Characteristics

Clopyralid is a selective herbicide that kills broadleaf weeds and brush. Clopyralid has some residual properties, and is somewhat soluble in water, but is generally not prone to leaching under normal conditions. It has no grazing restrictions.

Application

Clopyralid will be used in grassed areas where broadleaf and noxious weeds selective control. It may be used in some areas where there are more sensitivities for crops (Canola) and trees, as Clopyralid does not affect some specific species to the same extent that other broadleaf herbicides do.

Application method and equipment

Clopyralid will be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Clopyralid-based herbicides

Lontrel 360, Eclipse, etc.

3.07) Dicamba

Characteristics

Dicamba is a selective herbicide that kills broadleaf plants and brush. It is somewhat persistent in the soil and can leach if applied to course non-organic soil or gravel.

Dicamba is low in toxicity to mammals, is considered non-toxic to bees and fish, but has some grazing and food animal slaughter restrictions.

Application

Dicamba will be used in grassed areas where broadleaf weeds and brush require selective control. It may also be used for treatment on pads with acceptable drainage, if required to kill broadleaf weeds.

Application method and equipment

Dicamba may be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Dicamba-based herbicides

Dyvel DSp, Banvel, Oracle.

3.08) Diuron

Characteristics

Diuron is used to control many annual and perennial grasses and herbaceous weeds. When applied to the soil, it is useful in preventing the germination and growth of weed seedlings. As

diuron requires moisture (minimum 12 mm) to move it into the root zone, application timing is important in drier areas. As a result of the moisture requirement for activation, the effects on weeds are slow to appear and will not become apparent until the diuron has been absorbed into the plant and leaves. At the highest label rates, diuron is a residual, non-selective herbicide. At lower label rates, it is a selective, pre-emergent herbicide for the control of seedling broadleaf weeds and grasses.

It is a soil applied residual herbicide that requires moisture to move it into the root zones of the target vegetation. The best control with this herbicide is when it is applied to the soil shortly before weed growth begins

Application

Diuron is a dispersible granule mixed with water and applied as a spray for selective control of weeds in certain crops and for nonselective weed control on noncropland areas.

Application method and equipment

Diuron may be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers. Diuron may be used in certain applications as a pre-emergent herbicide as well.

Trade names of Diuron-based herbicides

Karmex

3.09) Flazasulfuron

Characteristics

Flazasulfuron is a broad spectrum selective, systemic herbicide providing season-long control of key annual and perennial broadleaf weeds and grasses. It can be applied either pre-emergence or post-emergence to control labeled broadleaf weeds and grasses.
It is a soil applied residual herbicide that requires moisture to move it into the root zones of the target vegetation. The best control with this herbicide is when it is applied to the soil shortly before weed growth begins

Application

For optimal herbicidal activity, prior to application, the bed or soil surface should be reasonably even and clear of crop and weed residue. Before herbicide application, crop and weed residue can be mixed into the soil through cultivation or removed by blowing the area to be treated. Any practices that cause disturbance of the soil surface after herbicide treatment will decrease herbicidal activity. If rainfall does not occur within 2 weeks after a pre-emergence application, then 0.5 to 1.25 cm of irrigation water should be applied. Do not apply more than 2.5 cm of irrigation water.

The use of a non-ionic surfactant at 0.25 percent by volume (0.25 litre/100 litres spray volume) provides a maximum performance for all postemergence applications. Surfactant products must contain at least 50% nonionic surfactants (see label of adjuvant).

Application method and equipment

Flazasulfuron may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers. Flazasulfuron may be used as a pre-emergent or post-emergent herbicide.

Trade names of Flazasulfuron-based herbicides

Longrun 25

3.10) Flumioxazin

Characteristics

Flumioxazin is a non-selective herbicide used to control grass and broadleaf weeds. Flumioxazin is a light-dependent peroxidizing herbicide (LDPH), which acts by blocking heme and chlorophyll biosynthesis resulting in the accumulation of photo-toxic porphyrins. It has some residual effect, with the typical half-life for Flumioxazin in soils being 15 days.

Application

Flumioxazin applied as a spray for non-selective control of grasses and weeds in certain crops and for nonselective weed control on noncropland areas.

Application method and equipment

Flumioxazin be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Flumioxazin-based herbicides

Payload, Torpedo, etc.

3.11) Glyphosate

Characteristics

Roundup WeatherMax is a non-selective, systemic herbicide that moves from the foliage into the roots and kills the entire plant. This herbicide is non–residual and risk of leaching is very low. Mammalian toxicity is very low, and it is non-toxic to birds and bees.

There is no grazing restriction or food animal slaughter restriction.

Application

Roundup WeatherMax will be used in areas where all vegetation is to be removed such as pads where equipment and facilities exist. It will also be used to remove weed growth from sites prior to seeding desired vegetation.

Application method and equipment

Roundup WeatherMax will be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Glyphosate-based herbicides

Roundup Weathermax, Roundup Transorb, Vantage Plus, etc.

3.12) Hexazinone

Characteristics

Hexazinone is the active ingredient in the herbicide Velpar. It is a soil-active herbicide which controls trees, brush, weeds, and grasses by inhibiting photosynthesis.

Velpar herbicide is a water-dispersible granule that is mixed in water and applied as a spray for weed control in certain crops, Christmas trees, forestry site preparation and release areas, and industrial areas. Velpar is an effective general herbicide providing both contact and residual control of many annual, biennial and perennial weeds and woody plants.

Application

Hexazinone is applied as a spray for selective control of weeds in certain crops and for nonselective weed control on noncropland areas.

Application method and equipment

Hexazinone be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Hexazinone-based herbicides

Velpar DF

3.13) Indaziflam

Characteristics

Indaziflam belongs to the alkylazine class of chemicals and works as both a pre- and post-emergence herbicide for annual grasses and broadleaf weeds.

It is a non-selective herbicide which has long lasting residual properties. Indaziflam has a long half-life in the soil (>150 days) which may allow for greater flexibility with application timing. It inhibits crystalline cellulose deposition in the plant cell wall, severely affecting cell wall formation, cell division as well as cell elongation. This means that fully developed leaves, tissues and organs are not or hardly affected by the compound since cell wall formation is already completed and no new cellulose synthesis occurs. It must be applied prior to weed emergence. Adequate soil moisture is required on application. Indaziflam is also used as a soil herbicide.

Application

Indaziflam is applied as a spray for non-selective control of grasses and weeds in situations where bare ground is desirable. It may be used in combination with Glyphosate to increase control of grasses and weeds which have already emerged at the time of application.

Application method and equipment

Indaziflam may be applied in general foliar applications and spot foliar applications.

Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Indaziflam-based herbicides

Esplanade

3.14) Imazapyr

Characteristics

Imazapyr is used to control broadleaf weeds, annual and perennial grass species and woody vegetation. It works by preventing germination of weed seeds. It is readily absorbed through foliage and roots and moves rapidly throughout the plant, where it breaks down tissue. It is particularly useful in controlling vegetation that has not been effectively managed using a combination of physical controls and glyphosate application. Treated plants stop growing soon after spray application.

Imazapyr has strong residual properties and may leach in soil under certain conditions. Areas where Imazapyr are used should have contained runoff.

Application

Imazapyr is applied as a spray for non-selective control of grasses and weeds in situations where bare ground is desirable.

Application method and equipment

Imazapyr may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Imazapyr-based herbicides

Arsenal

3.15) Metsulfuron Methyl

Characteristics

Metsulfuron Methyl is a selective herbicide that kills broadleaf plants and brush. It is somewhat persistent in the soil and can leach if applied to course non-organic soil or gravel. It is of low toxicity to mammals and has no grazing or food animal slaughter restrictions.

Application

Metsulfuron Methyl will be used in grassed areas where broadleaf weeds and brush require selective control. It may also be used for treatments on pads with acceptable drainage, if required to kill resilient broadleaf weeds.

Application method and equipment

Escort will be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Metsulfuron Methyl-based herbicides

Escort, Ally, Clearview, etc.

3.16) MCPA (Esther and Amine)

Characteristics

MCPA is a systemic, selective post emergent herbicide of low persistence. MCPA disrupts cell division, causing abnormal growth response, thereby affecting respiration and food reserves. Weeds start to twist between 2 - 20 days after spraying, depending on weather conditions, formulation and nature of weeds. Following the twisting and bending, plants will turn brown and then die.

MCPA is often tank-mixed with other herbicides to increase efficacy on target species.

Application

MCPA is applied as a spray for non-selective control of grasses and weeds in situations where bare ground is desirable.

Application method and equipment

MCPA may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of MCPA-based herbicides

MCPA

3.17) Propyzamide

Characteristics

Propyzamide is a specialized herbicide for use in control of Foxtail Barley. It is a systemic soil herbicide used to reduce emergence or stunt the emerging plants. It must be applied under specific temperature conditions in the fall, or the spring (before the emergence of the weeds), with some rain within a few days of application.

Application

Propyzamide is applied as a spray for selective control of foxtail barley.

Application method and equipment

Propyzamide may be applied in general foliar applications and spot foliar applications in spring or fall applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Propyzamide-based herbicides

Kerb SC

3.18) Quizalofop

Characteristics

Quizalofop is an active ingredient which may be used to selectively control some grassy and perennial weeds. Grassy weeks show a reduction in growth and loss of competitiveness. An early yellowing or browning of the younger plant tissues is followed by a progressive collapse of the remaining foliage. The results will generally be observed in 1-3 weeks, depending on the grass species treated and the conditions.

Application

Quizalofop is applied as a spray for selective control of some grassy and perennial weeds.

Application method and equipment

Quizalofop may be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Quizalofop-based herbicides

Assure II, Yuma, Elegant

3.19) Saflufenacil

Characteristics

Saflufenacil is herbicide for industrial bare ground sites, utility substations, roadsides, railroads, utility rights-of-way and forestry sites. Featuring a new mode of action that inhibits the production of an enzyme in plants. It speeds the burndown of existing weeds without disrupting the translocation to the roots. It controls existing weeds that have developed a resistance to other commonly used herbicides and provides excellent broadleaf control.

Application

Saflufenacil is applied as a spray for selective control of weeds and can be tank mixed with a variety of non-selective herbicides to greatly improve the spectrum of control. It is non-volatile and has limited mobility in the soil.

Application method and equipment

Saflufenacil may be applied in general pre-emergent and post-emergent applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Saflufenacil-based herbicides

Detail

3.20) Simazine

Characteristics

Simazine is used to control seed germination of some broadleaf weeds, annual and perennial grasses. It is particularly useful where combinations of physical controls and post emergent spot herbicide treatments have not managed vegetation. It is absorbed mainly through roots and has very little foliar activity. Simazine is held tightly in the soil. Because of its low solubility, it is useful

under humid conditions where longer residual action is required. It does not leach readily in the soil.

Application

Simazine is applied as a spray for non-selective control of some grasses and perennial weeds. It is largely a pre-emergent treatment which binds to the soil.

Application method and equipment

Simazine may be applied in general pre-emergent applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Simazine-based herbicides

Princep Nine T, Simazine

3.21) Sodium Diflufenzopyr

Characteristics

Combined with Dicamba, under the trade name Overdrive, it is a selective post-emergence herbicide for the control of annual broadleaf weeds and many perennial weeds in non-cropland sites, pasture and rangeland grasses.

Application

Sodium Diflufenzopyr is applied as a spray for selective control of some annual and perennial weeds.

Application method and equipment

Sodium Diflufenzopyr may be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Sodium Diflufenzopyr-based herbicides

Overdrive

3.22) Triclopyr butoxyethyl ester

Characteristics

Triclopyr butoxyethyl ester is a selective, systemic, auxin-mimicking herbicide that is effective for controlling broadleaf and woody plants while having lower toxicity to grasses. Triclopyr has a low acute mammalian toxicity and considered moderately to highly toxic to aquatic life. It is practically non-toxic to slightly toxic to birds and practically non-toxic to bees.

Application

Triclopyr may be applied as a single stem foliar, or low volume foliar application. is applied as a spray for selective control of some annual and perennial weeds.

Application method and equipment

Triclopyr may be applied in low volume foliar applications and single stem foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Triclopyr-based herbicides

Garlon XRT, Garlon RTU

3.23) 2, 4-D Amine

Characteristics

2, 4-D is a selective herbicide that kills broadleaf weeds and brush. 2, 4-D is not prone to leaching and is not persistent in the soil.

It is moderately toxic to mammals and has some grazing and food animal slaughter restrictions.

Application

2, 4-D will be used in grassed areas where broadleaf weeds and brush require selective control.

Application method and equipment

2, 4-D will be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of 2, 4-D-based herbicides

2, 4-D Amine 600, 2, 4-D Esther 500, etc.

3.24) Metsulfuron-Methyl

Characteristics

Metsulfuron-methyl is a residual sulfonylurea herbicide that kills broadleaf weeds and some annual grasses. It is a systemic compound with foliar and soil activity, that inhibits cell division in shoots and roots. It has residual activity in soil, allowing it to be used infrequently but requires up to 22 months before planting certain crops (sunflowers, flax, corn, or safflower). It has very low toxicity to mammals, birds, fish, and insects, but is a moderate eye irritant.

Application

Metsulfuron-methyl will be used in grassed areas where broadleaf weeds and brush require selective control.

Application method and equipment

Metsulfuron methyl will be applied in general foliar applications and spot foliar applications. Equipment used to apply the herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Metsulfuron methyl-based herbicides

Escor

3.25) Fluroxypyr

Characteristics

Fluroxypyr is a selective herbicide used to control broadleaf weeds and woody brush. Key characteristics include its selectivity for broadleaf weeds over grasses, relatively fast breakdown in soil with a moderate half-life (36 days) and low potential for leaching to groundwater, and potential for surface runoff.

Application

Fluroxypyr is used to control broadleaf weeds and woody brush.

Application method and equipment

Fluroxypyr may be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Fluroxypyr-based herbicides

Sightline, Octtain XL

3.26) Florpyrauxifen & Aminopyralid

Characteristics

Florpyrauxifen is a selective, postemergence herbicide belonging to the arylpicolinate chemical family, while aminopyralid is another selective herbicide used for broadleaf control, particularly in pastures, rights-of-way, and tree crops. Products containing both are designed to be highly effective while being practically non-toxic to mammals, birds, fish, and most invertebrates

Application

Florpyrauzifen & Aminopyralid are a selective herbicide used for controlling broadleaf weeds.

Application method and equipment

Florpyrauzifen & Aminopyralid may be applied in general foliar applications and spot foliar applications. Equipment used to apply herbicide may consist of truck or UTV mounted boom or boom-less sprayers, hand operated reel equipment, and backpack sprayers.

Trade names of Florpyrauzifen & Aminopyralid-based herbicides:

Milestone NXT

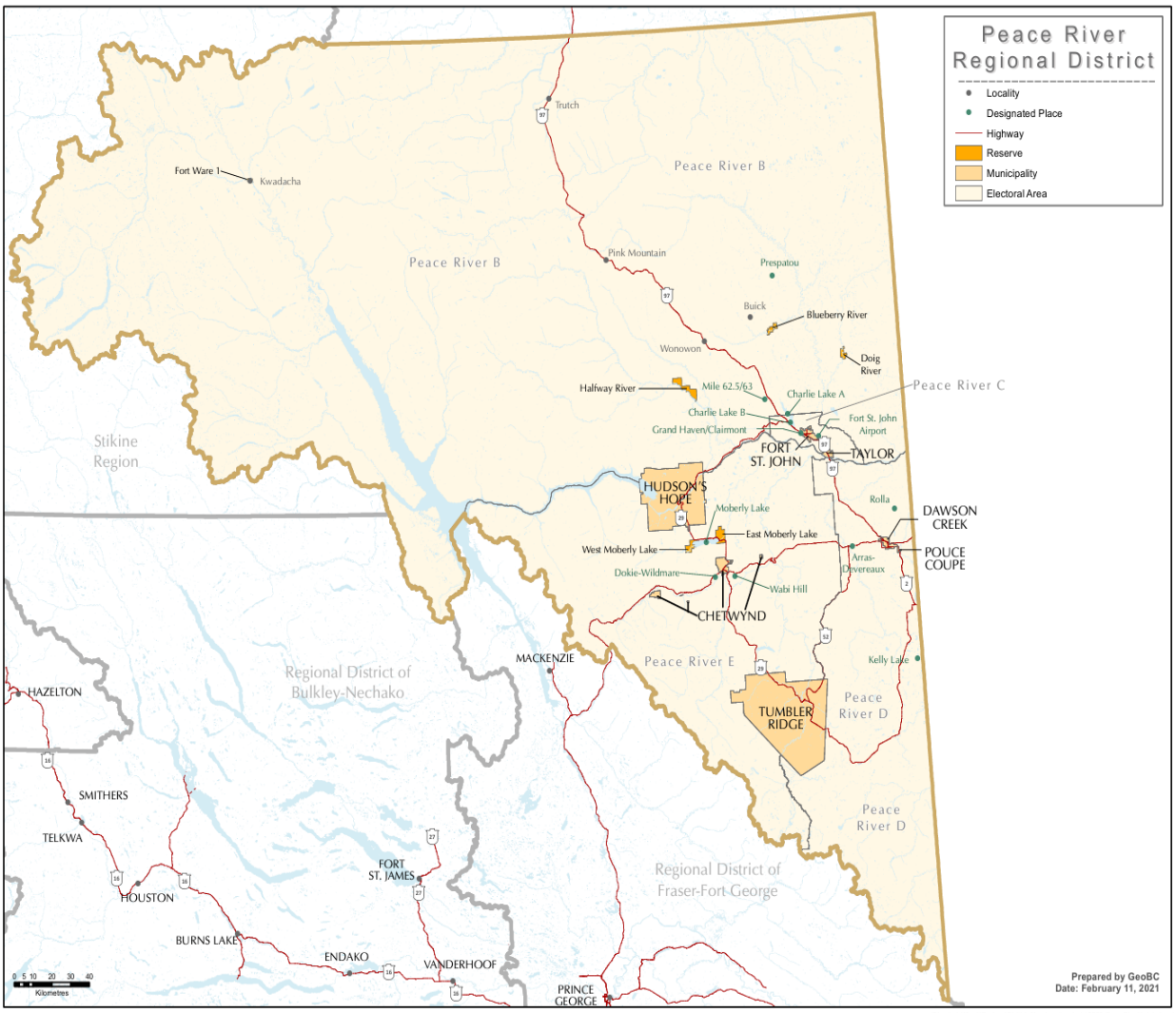
F) Application Records

1.0) Information contained in the application records

a) Date & time of application or inspection
b) Site location
c) Company for whom the service was performed
d) Vegetation type, density, and stage for each treatment area
e) Environmental conditions including wind speed, wind direction, temperature, and precipitation
f) Distance to nearest body of water if within 30 meters.
g) Distance to any fruit or vegetable crop if within 30 meters
h) Description of any damaged vegetation both on and off site prior to application
i) Description of any significant on-site soil erosion
j) Site map showing distances, buildings, area boundaries and treatment locations
k) Herbicide requirement calculations (treatment area * application rate)
l) Herbicide type, PCP number, application method, and amount applied on site
m) Application variance shown both as a volume and as a percentage of required herbicide
n) Certificate number of responsible Certified Pesticide Applicator on site during the application

G) Appendices

Appendix A: Peace River Regional District



Appendix B: Northern Rockies Regional Municipality