



# Petroleum Resource Management Corp. Integrated Noxious Weed Management Plan (INWMP)

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## **1. PURPOSE:**

Fielding Hill, LLC, on behalf of Petroleum Resource Management Corp. (PRM) has prepared an Integrated Noxious Weed Management Plan (INWMP) to be implanted for PRM's operations (Operations) located in Moffat County, Colorado beginning in 2025. The purpose of the INWMP is to proactively protect the lands within PRM's Operating Areas from the spread of noxious weeds, and to use integrative management to control infested areas. Operating Areas include pipeline or flowline rights-of-way, oil and gas locations, access roads, and other areas that are within PRM's direct operational control.

The goal of this INWMP is to outline processes which address the growth and spread of noxious weeds through actionable weed management steps and facilitate the construction, operations, and reclamation of PRM Operating Areas. These processes include the following:



- Survey protocols for the identification and mapping of noxious weed species, location, severity, and extent;
- Measures to avoid the spread of noxious weeds;
- Approved treatment methods within or near Operating Areas to control and manage noxious weeds; and
- Steps to revegetate disturbed areas to prevent the spread of noxious weeds.

## **2. SCOPE:**

This INWMP includes: a description of noxious weeds, pre-disturbance noxious weed survey results, integrative approach to weed management, INWMP objectives, preventive actions, treatments for temporary disturbed areas, treatments for infested areas, topsoil area management, specific noxious weed species control methods, and noxious weed monitoring and surveying.

## **3. INTEGRATED NOXIOUS WEED MANAGEMENT PLAN:**

### **3.1. NOXIOUS WEED BACKGROUND**

The Federal Noxious Weed Act of 1974 defines noxious or invasive weed species as plants “classified as undesirable, noxious, harmful, exotic, injurious, or poisonous” and do not include species indigenous to an area where control measures are to be taken. State and local governments have laws in place to limit the establishment and spread of noxious weeds. In 1990, the Colorado Noxious Weed Act 3.5-5.5-101 through 119, C.R.S (Act) was created to require landowners and managers to manage noxious weeds. The Act mandated that each county and municipality in Colorado adopt a noxious weed management plan for its jurisdiction. A list of weeds that are considered “noxious” for Colorado was prepared by the Colorado Department of Agriculture Noxious Weed Program. Criteria for noxious weed species described by the Act include:

- Aggressively invades or is detrimental to economic crops or native plant communities.
- Poisonous to livestock.
- Carrier of detrimental insects, diseases, or parasites.
- The direct or indirect effects of the presence of this plant is detrimental to the environmentally sound management of natural and agricultural ecosystems.



Colorado has created three lists of noxious weed species, where each list is assigned prioritization of how to manage them.

- List A species are highly damaging to the economy and land resources and should be immediately eradicated.
- List B species are the most widespread and cause the greatest economic impact in the state of Colorado; they must be eradicated, contained, or suppressed.
- List C species are weeds not yet present in most parts of Colorado nor do they cause widespread economic damage, but they cause problems elsewhere. By Colorado state law, List C is not required to be controlled, but local governing bodies may require management.

There are 31 noxious weed species listed by the Colorado Department of Agriculture known to occur in Moffat County (Attachment 1) according to Moffat County Weed and Pest Management.

### **3.2. NOXIOUS WEED SURVEY**

PRM will conduct a noxious weed survey prior to construction of any new locations and multiple times each growing season at operating locations to identify noxious weeds within the Operating Area. The noxious weed survey will be conducted using a pedestrian transect survey to adequately assess the survey area. Identified noxious weeds will be mapped using a handheld GPS receiver in UTM coordinates and NAD83 datum. The perimeter of any noxious weed infestations identified will be mapped as a location polygon. Individual plants will be mapped using the same method to create a point location. Noxious weeds identified during the survey will be presented in Noxious Weed Survey Record (Attachment 2).

### **3.3. INTEGRATIVE APPROACH**

To manage the spread of noxious weeds, an integrative approach to weed management is required. Integrated weed management includes planning and implementation of a variety of methods for managing noxious weeds and limiting the adverse impacts to non-target organisms. An integrative approach includes three levels of controls to manage the spread of noxious weeds, which are eradication, containment, or suppression of the infested areas in and near the Operating Area. Eradication is designed to remove the infestation areas over several growing seasons through active treatment. Containment involves controlling the spread of infested areas by managing the perimeters of those areas. Suppression is intended to reduce



the abundance and density of weeds within the infestation area. Several methods (mechanical, cultural, preventive, and chemical) are used to pursue these three levels of controlling the spread of noxious weeds. These include:

- Mechanical controls (e.g. mowing)
- Cultural controls (practices that favor the growth of desirable plants over noxious weeds)
- Preventive measures (avoiding driving equipment or walking through infestation areas)
- Chemical controls (e.g. herbicides)

Other methods include education, improved procedures, and best management practices. The level of control (eradication, containment, and suppression) and the method used will be determined based on the species type (List A, B, or C) and severity of infestation.

#### **4. APPROACHES AND TREATMENT METHODS:**

Numerous treatment methods exist for the treatment of noxious weeds within the Operating Areas. Locations will be treated by selecting the most efficient and effective method to address site conditions and allow for continued development and operational success.

##### **4.1. TOPSOIL AND SOIL STOCKPILE MANAGEMENT**

Topsoil salvaged from the areas of disturbance within the Operating Areas and stockpiled for reuse shall be treated to eliminate noxious weeds prior to salvage. The topsoil stockpiles shall be monitored and treatment shall be implemented as needed. The results of topsoil monitoring, including surveys and treatment application shall be recorded and included in the Noxious Weed Survey Record (Attachment 2) and Noxious Weed Treatment Activities Report (Attachment 3) as appropriate.

If imported topsoil is used for any part of the Operating Area, the imported topsoil shall be inspected and treated for noxious weeds prior to delivery. PRM will be responsible for conducting at least one survey or treatment application each year and collecting any weed-free certifications for mulch applied at locations.

Avoid leaving piles of exposed soil in construction areas if possible. Soil stockpiles should be covered or revegetated with native species as soon as practicable.



## **4.2. TREATMENT FOR TEMPORARY DISTURBED AREAS**

Areas of temporary disturbance shall be reclaimed as soon as practicable. Disturbed areas should be seeded with permanent native seed mixture (where applicable). If construction activities are complete in a given area and permanent seeding cannot occur due to the time of year, mulch and mulch tackifier shall be used for temporary erosion control and weed prevention until seeding can occur. Only certified weed-free mulch and bales shall be used.

## **4.3. TREATMENT FOR INFESTED AREAS**

Noxious weeds observed within the Operating Area prior to construction will be treated with herbicides or physically removed to prevent seeds from blowing into disturbed areas during construction.

Populations of newly introduced weed species should be eradicated as soon as possible before they have an opportunity to establish permanent populations.

Mowing, cutting, and applying herbicides should be done early in the growing season to avoid dispersing the seeds and fruits that could spread infestations. Records of noxious weed treatment shall be maintained within the Noxious Weed Treatment Activities Report (Attachment 3).

Care shall be taken in sensitive areas (e.g. wetlands, streams, ponds, etc.). Typically cutting/pulling will be utilized in these areas to avoid impacts to resources. If herbicides are necessary, a site-specific treatment plan may need to be developed to ensure impacts are minimized.

### **4.3.1. HERBICIDE TREATMENT**

All herbicides shall be applied by commercial pesticide applicators licensed by the Colorado Department of Agriculture as qualified applicators. Herbicide mixing and application shall be done in accordance with instructions on the registered product label. Herbicides shall not be applied when weather conditions, including wind conditions, are unsuitable for such work.

### **4.3.2. MECHANICAL TREATMENT**

#### **4.3.2.1. Hand Pulling:**

If a single or small patch of noxious weeds is noticed, they should be removed by pulling out roots and leaving the weeds to dry. If flowers



or seeds are observed weeds shall be disposed in bags or containers.

**4.3.2.2. Mowing:**

Mowing is most effective in relatively flat and dry areas and can weaken weed plants by depleting root and rhizome reserves through repeated mowing. For large-scale cutting, set the mower blade height relatively high so as to cut the taller weeds but to not cut the shorter, slower-growing desirable species. Do not mow or cut weeds when fruits are mature and seeds are viable or capable of dispersing. Dispose of cut stems if they contain seeds.

**4.3.2.3. Mulching:**

Any erosion control materials such as compost or mulch that will be imported shall be certified weed free. A bonded fiber matrix, spray-on mulch blanket, a flax-based or wood straw, or approved product for reclamation of disturbed areas shall be used to mulch seeded areas. Mulching should be used for reclamation and erosion control when seeding cannot be used. Mulching must be uniformly applied with no bare soil showing.

**4.4. TREATMENT FOR AREAS FOLLOWING CONSTRUCTION**

Disturbed areas shall be reclaimed as soon as practicable after construction has been completed and seeded or revegetated with an approved native seed mix. Noxious weed management after earthwork operations and stabilizing has been completed shall require chemical and mechanical methods that do not disturb native seeding and mulching areas. The use of fertilizers should be limited when reseeding as their use may favor weeds over native perennial species.

**5. SPECIFIC NOXIOUS WEED SPECIES MANAGEMENT**

Some methods have been found to be more successful than others for certain noxious weed species. Below are recommendations for some of the List B noxious weeds typically found within the area of Colorado where PRM's Operating Areas are situated.

- Canada thistle – A perennial, rhizomatous weed that often grows in moist areas along streams: A combination of mowing 3 to 5+ times during the growing



season and applying glyphosate herbicide at the end of the growing season can be successful for controlling its spread.

- Hoary Cress – A perennial forb that grows up to 10 to 18 inches tall and has small, numerous white flowers that occur in flattop clusters: Mowing 3+ times at the bud (pre-blooms) growth stage followed with a fall application of herbicide can control the spread.
- Musk thistle – A biennial plant that grows in dry rangelands: It can be controlled by reducing the abundance of bare soil and increasing the vigor of desirable native plants. This can be done by seeding native plants and introducing musk thistle seed weevils to attack the seed heads of thistle plants. If there are low levels of musk thistle, cutting and removing the seed heads before the seeds ripen is the best method. Herbicide is only effective in the fall, do not use in spring or summer after plants have bolted.
- Perennial pepperweed – A perennial plant that stands 3-to-5 feet tall with a heavy, and sometimes woody crown; they have white flowers and leaves are oblong with toothed margins: Mowing is ineffective but applying herbicides during bud stage, before flowering or re-sprouting stems in late summer is successful.
- Russian olive – A small tree or shrub: Can be controlled with the combination of cutting the plants then immediately applying triclopyr herbicide. Cutting shall be done by cutting as close to the ground as possible. Apply herbicide within 30 seconds of cutting, concentrating the herbicide on the outer portion of the stump where the growing layers occur. This method is most successful during the fall.

## **6. MONITORING AND SURVEYING**

Periodic weed surveys are to be conducted during reclamation throughout the growing period between March 1 and October 1 to determine the effectiveness of the management efforts and to locate any new infestations or existing infestations that are spreading.

The extent and abundance of each infestation will be mapped. A Noxious Weed Survey Record (Attachment 2) will be completed for each survey at a given location. Surveys will be conducted with a GPS and a printed aerial map to show the extent of the infestations. The GPS data will be added to a map and compared with previous surveys to determine the effectiveness of methods controlling the spread of the noxious weeds. Map reviews



will determine what actions need to be implemented to treat areas of weeds that have spread.

Noxious weeds identified during construction must be treated with methods discussed in this INWMP. Small patches or single noxious weed plants should be removed once they have been identified. Revegetated areas shall be monitored to make sure noxious weeds are not propagating and revegetation activities are successful.

**ATTACHMENTS:**

- Attachment 1: Colorado Noxious Weed Species Known to Occur in Moffat County
- Attachment 2: Noxious Weed Survey Record
- Attachment 3: Noxious Weed Treatment Activities Report

**ATTACHMENT 1**

**Colorado Noxious Weed Species Known to Occur in Moffat County**

**COLORADO NOXIOUS WEED SPECIES IN MOFFAT COUNTY**

<b>Common Name</b>	<b>Scientific Name</b>	<b>US Code</b>	<b>State Listing</b>
Absinth wormwood	<i>Artemisia absinthium</i>	ARAB3	B
Black henbane	<i>Hyoscyamus niger</i>	HYNI	B
Bulbous bluegrass	<i>Poa bulbosa</i>	POBU	C
Bull thistle	<i>Cirsium vulgare</i>	CIVU	B
Canada thistle	<i>Cirsium arvense</i>	CIAR4	B
Cheatgrass (Downy brome)	<i>Bromus tectorum</i>	BRTE	C
Common mullein	<i>Verbascum thapsus</i>	VETH	C
Dalmatian toadflax	<i>Linaria dalmatica</i>	LIDA	B
Diffuse knapweed	<i>Centaurea diffusa</i>	CED13	B
Field bindweed	<i>Convolvulus arvensis</i>	COAR4	C
Halogeton (saltlover)	<i>Halogeton glomeratus</i>	HALG	C
Hoary cress	<i>Cardaria draba</i>	CADR	B
Houndstongue	<i>Cynoglossum officinale</i>	CYOF	B
Jointed goatgrass	<i>Aegilops cylindrica</i>	AECY	B
Leafy spurge	<i>Euphorbia esula</i>	EUES	B
Musk thistle	<i>Carduus nutans</i>	CANU4	B
Oxeye daisy	<i>Leucanthemum vulgare</i>	LEVU	B
Perennial pepperweed	<i>Leipidium latifolium</i>	LELA2	B
Perennial sowthistle	<i>Sonchus arvensis</i>	SOAR2	C
Poison hemlock	<i>Conium maculatum</i>	COMA2	C
Puncturevine	<i>Tribulus terrestris</i>	TRTE	C
Quackgrass	<i>Elymus repens</i>	ELRE4	C
Redstem filaree	<i>Erodium cicutarium</i>	ERCI6	C
Russian knapweed	<i>Acroptilon repens</i>	ACRE3	B
Russian olive	<i>Elaeagnus angustifolia</i>	ELAN	B
Salt cedar	<i>Tamarix chinensis</i>	TACH2	B
Scotch thistle	<i>Onopordum acanthium</i>	ONTA	B
Scotch thistle	<i>Onopordum tauricum</i>	ONTA	B
Spotted knapweed	<i>Centaurea maculosa</i>	CEMA4	B
Sulfur cinquefoil	<i>Potentilla recta</i>	PORE5	B
Yellow toadflax	<i>Linaria vulgaris</i>	LIVU2	B

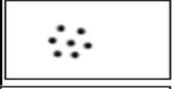
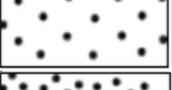
**ATTACHMENT 2**

**Noxious Weed Survey Record**

**FORM 1. NOXIOUS WEED SURVEY RECORD**

<b>Performed By:</b>	<b>Survey Date:</b>	<b>Site ID/Sheet Number:</b>	<b>Weather: (Temperature, Wind, etc.)</b>		
<b>NOXIOUS WEED SURVEY DETAILS</b>					
<b>NOXIOUS WEED OBSERVED (Species name)</b>	<b>Latitude/Longitude (Location number)</b>	<b>List (A,B,C)</b>	<b>Density Code (1-4)</b>	<b>Distribution Code (1-9)</b>	<b>Proposed Treatment and Date (Herbicide, Mechanical, Cultural)</b>
<b>TOPSOIL AND SOIL STOCKPILE SURVEY DETAILS</b>					
<b>Comments:</b>					

1. Site ID/Sheet Number 1 through.
2. Refer to the Integrated Noxious Weed Management Plan (INWMP) for additional information.

DISTRIBUTION CODE			DENSITY CODE		
Code	Reference:	Description:	Code:	Reference:	Description:
1		Rare individual, a single occurrence	1	Low	< plant per 9 sq/ft
2		Few sporadically occurring individuals	2	Medium	2-5 plants per 9 sq/ft
3		Single patch or clump of species	3	High	6-10 plants per 9 sq/ft
4		Several sporadically occurring individuals	4	Dense	> 10 plants per 9 sq/ft
5		A few patches or clumps of a species			
6		Several well-spaced patches or clumps of a species			
7		Continuous uniform occurrence of well-spaced individuals			
8		Continuous occurrence of a species with a few gaps in the distribution			
9		Continuous dense occurrence of a species			

**ATTACHMENT 3**

**Noxious Weed Treatment Activities Report**

**FORM 2. NOXIOUS WEED TREATMENT ACTIVITIES REPORT**

<b>Reviewed By:</b>	<b>Performed By:</b>	<b>Survey Date:</b>	<b>Site ID/Sheet Number (1)</b>	<b>Weather: (Temp, Wind)</b>
<b>NOXIOUS WEED TREATMENT DETAILS</b>				
<b>Treatment Type: (Herbicide or Mechanical)</b>	<b>Treatment Date:</b>	<b>Species Type(s):</b>	<b>Latitude/Longitude:</b>	<b>Treatment Details:</b>
<b>Comments:</b>				

1. Site ID/Sheet Number 1 through.
2. Refer to the Integrated Noxious Weed Management Plan (INWMP) for additional information.