Horsepack Weed Control

Weed control on steep slopes and restricted access sites in the Limestone Hills

RMA Inc.
Since 1992 Resource Management Associates (RMA) Inc. has been providing weed control services for Graymont Western U S Inc. Indian Creek Plant (Graymont).

Graymont’s permit area encompasses 2000+ acres.
History

- Shared boundary with the Montana Army National Guard- Limestone Hills Gunnery Range (Guard).

- RMA Inc. provided both the Guard and Graymont with Horsepack weed spraying in 2013.

- In 2014 Weave Management acquired RMA Inc. and formed Weave Consulting Inc.
Location
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>Cheatgrass</td>
<td><em>Bromus tectorum</em></td>
</tr>
<tr>
<td>Dyer’s Woad</td>
<td><em>Isatis tinctoria</em></td>
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<tr>
<td>Henbane, Black</td>
<td><em>Hyoscyamus niger</em></td>
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<tr>
<td>Houndstongue</td>
<td><em>Cynoglossum officinale</em></td>
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<tr>
<td>Knapweed: Russian, Spotted</td>
<td><em>Acroptilon repens, Centaurea stoebe</em></td>
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<tr>
<td>Mullien, Common</td>
<td><em>Verbascum Thapsus</em></td>
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<tr>
<td>Rush Skeletonweed</td>
<td><em>Chondrilla juncea</em></td>
</tr>
<tr>
<td>Spurge, Leafy</td>
<td><em>Euphorbia esula</em></td>
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<tr>
<td>Thistle: Bull, Canadian, Musk</td>
<td><em>Cirsium vulgare, arvense, Carduus nutans</em></td>
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<tr>
<td>Toadflax, Dalmation</td>
<td><em>Linaria dalmatica</em></td>
</tr>
</tbody>
</table>
# Chemicals used

<table>
<thead>
<tr>
<th>Chemicals</th>
<th>Adjuvant, Surfactant, Dye</th>
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</thead>
<tbody>
<tr>
<td>Tordon 22K</td>
<td>Brimstone (Fertilizer)</td>
</tr>
<tr>
<td>Chaparral</td>
<td>Syltac (sticker)</td>
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<tr>
<td>Perspective</td>
<td>HiLight (Dye)</td>
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<tr>
<td>Escort</td>
<td></td>
</tr>
<tr>
<td>2,4-D</td>
<td></td>
</tr>
<tr>
<td>Milestone</td>
<td></td>
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<tr>
<td>ForeFront</td>
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</tr>
</tbody>
</table>
Weed Control Strategy

1. Pathways for weed transportation such as roads, trails and wash areas.
2. Reclamation and other main areas.
3. Secondary infestation areas
4. Re-inspection and application of all areas during the year.

❖ Each step must be followed for successful weed control
Challenges

- Lack of close water supply.
- 1,400 slope feet of rocky 2:1 hillside with no access.
- Active military range and mining areas
- 10-20% bare ground allows easy weed propagation.
Unexploded Ordnance (UXO)

Graymont claims area contaminated with UXO from historical guard training activities 1948-1960’s.

Claims area being cleared by the Guard since 1998.
Presently weed control activities extend into uncleared contaminated areas.

RMA personnel trained and experienced with this hazard.

Watch your feet, don’t touch and report.

Range is still being used and weed control personnel must be familiar with safety and radio procedures.
76mm High Explosive - fuzed
81mm Mortar
Tail Assembly from 3.5 inch Rocket
40mm Grenade

Non historical contamination.
ATV Spraying

- 6x6 Polaris Ranger with 55 gallon tank and 200 feet of hose.
- Used for roadways on the mine, trail and off-road
- 55 gallon tank makes Ranger top heavy.
- Highly effective method with large capacity and capability.
Add picture of ranger sprayer in terrain
Backpack Spraying

- Useful for areas not accessible by Ranger or hose; reclaimed exploration roads, steep slopes, talus slopes.

- 3-4 gallon capacity, hand pump pressurized, adjustable nozzle.

- Fringe areas where backpack could be used are of a lower priority compared to reclamation and main areas.
Saddle Light Horsepack System
In 2012 RMA started its horsepack weed spraying operation utilizing the Saddle-light system developed by the Blanco Ranger District in Meeker, CO for the White River National Forest (Tom McClure).

For more information contact Matt Scott@ 970-878-9670 or mscott@co.rio-blanco.co.us
It is a significant increase in efficiency from backpack spraying. A two man horsepack team can cover more than 3 times the amount of acreage compared to backpacks alone.

Recent comparisons of horsepack versus backpack spraying in the White River National Forest have shown horsepack spraying to have over 3.3 times the coverage potential with much less physical requirement.
A horse named Bill
Four 5 gallon soda kegs that are carried in aluminum frame panniers.

Using standard pack saddles and harness.

Filled with premixed chemical or filled with water and then mixed.

Pressurized with a CO² cylinder carried in the pack.
Both the CO\(^2\) and spray nozzle are regulated so that pressure and flow can be altered to optimize the per acre rate, spray pattern, weed density, and weather conditions.

Calibration follows the standard 18.5 foot x 18.5 foot square method (1/128\(^{th}\) of an acre).
Saddle-light system opens up areas that were not previously cost effective to spray.

Weed free hay is used during operation.

Effects of high heat and water for horses must be considered.

Operators must be experienced with horses. New risks involved with the use of horses.
Grey Grey
Safety

Healthy, reliable, and tested horses are a must
When a horse stumbles or falls, it goes downhill: always stay above the horse
If the terrain doesn’t look passable for horses DO NOT ATTEMPT APPLICATION.
To work safely, horses need to be well fed and need plenty of water, especially in hot weather
First aid training and supplies for humans and horses are a must in the field
Application

- Due to the remote spray locations, efficiency is extremely important
- When working in remote locations, locate the staging area (water source) in the most convenient location possible so as to minimize refill times
- Refill with natural water sources to minimize trips back to staging area
Questions?