

# Surface Reseeding and Weed Treatment Plan

Beeman Oil & Gas, LLC (7125)  
Gladys 2 (05-067-09363)  
SE/4 SE/4, Section 14, T33N, R12W, NMPM  
La Plata County, Colorado

## Background

Beeman Oil & Gas, LLC, as operator, desires to complete reseedling and additional weed treatments efforts within the interim reclamation area and along the pipeline to tank battery for the producing Gladys 2 well in La Plata County, Colorado. With some desirable vegetation present this Surface Reseeding and Weed Treatment Plan ("Plan") focuses on an additional reseedling and weed treatment effort while minimizing disruption to existing desirable vegetation of the disturbed and surrounding areas. Weed treatment was re-implemented during the fall of 2014 following several years of neglect and is being continually monitored and treated at this time by Beeman Oil & Gas LLC. Reseedling activities would not begin until approval is given by the COGCC and a 48 hour notification is provided to the compliance officer. A company representative would provide oversight and photo document the entire reseedling effort and provide continuous weed monitoring and treatment.

## Site Description

The existing interim reclaimed area consists of a re-contoured drill pad area (excludes the productive area of the pad) and the associated pipeline route to the tank battery (see Appendix A – Photos). The well site and pipeline route are entirely on private surface with some existing desirable vegetation present and considerable weed populations.

## Reseeding and Weed Treatment Procedure

### Preparation for Reseeding

Reseeding of the pad area not utilized for the continued operation of the well would occur during fall 2014 and is presently scheduled for late mid-November 2014 during a period when suitable soil moisture exists and ambient daily maximum temperatures are routinely below 60 degrees Fahrenheit. November was also selected to minimize reseedling impacts from herbicide treatments that are ongoing during the summer season. The access road and pad area would initially be photo documented for future reseedling success and inspected for areas where desirable vegetation exists. Undesirable weed species, if present, would also be photo documented and hand-labor utilized to cut, bag and remove Russian Knapweed seed stalks from the active monocultures on and around the pad to significantly reduce spreading during reseedling efforts. The bagged Russian Knapweed seed stalks would be burned off-site in a private yard area where seed re-germination is unlikely and would not be placed in a landfill or otherwise discarded. The Russian Knapweed areas would also be flagged with pin flags or lathe and flagging for avoidance during the reseedling effort. Preparation would culminate with an evaluation if fencing is necessary to minimize livestock impacts.

### Fertilizer and Soil Amendment

Recent past experience in the area suggests that fertilizer and soil amendment may not be necessary to achieve a successful revegetation of this site. Accordingly, initial revegetation efforts would be carried out using the existing soil chemical and physical properties without amendment. If, after a 1-year cycle of growing seasons has occurred, the site has not achieved a 30% vegetation compared to a random adjacent area transect, the following Contingency Fertilizer and Soil Amendment program would be implemented.

### Contingency Fertilizer and Soil Amendment

If, after a 1-year cycle of growing seasons has occurred, the site has not achieved a 30% vegetation compared to a random adjacent area transect, this Contingency Fertilizer and Soil Amendment program would be implemented.

Baseline soil samples would be collected from three separate locations within each pad area proposed for reseeding utilizing a third-party contractor and sound soil sampling techniques. The samples would be analyzed as a composite at a certified lab for the following characteristics: texture, pH, organic matter, sodium absorption ratio (SAR), cation exchange capacity (CEC), alkalinity/salinity, and basic nutrients (nitrogen, phosphorus, potassium [NPK]) and the results and professional soil amendment recommendations reported to the COGCC. Commercially available soil amendments would be broadcast onto the site and disced into the top 1-inch of the soil surface unless discing would greatly inhibit desirable vegetation growth.

### Reseeding

A tractor and range land drill would be utilized for the pad and access road reseeding effort to minimize disturbance to existing desirable vegetation and minimize the propagation of undesirable species. The range land drill would be equipped with a depth regulator to insure even depths of planting not to exceed 1/2 inch. The rangeland drill would also be equipped with multiple seed boxes or drill seeded multiple times to insure lighter seed concentration areas do not exist. Equipment use would focus on minimal disturbance to the site that would propagate additional undesirable species. The tractor and range land drill would initially be power washed before coming to the area and would again be power washed immediately upon leaving the area.

The rangeland drill would reseed the area utilizing the seed mix below. Efforts with the rangeland drill would focus on minimizing surface disturbance and be completed in a systematic fashion to minimize additional travel and disturbance of the disturbed areas.

### Seed Mix

Seeding is to be done during late fall or November, 2014 unless modified by the COGCC, utilizing commercially available and certified weed free seed. A modified native perennial seed mix has been used by Beeman Oil & Gas, LLC and approved by the surface landowner, and is outlined below:

#### **Modified Seed Mix for Slick Rock Fed 8-23-43-17 Well Site**

<i>Common Name</i>	<i>Species Name</i>	<i>Variety</i>	<i>PLS<sup>1</sup> lbs/ac*</i>
Sand Dropseed	<i>Sporobolus cryptandrus</i>	VNS	0.07
Winterfat	<i>Krashennikovia lanata</i>	VNS	0.35
Four-wing	<i>Atriplex canescens</i>	VNS	0.35
Indian Ricegrass	<i>Achnatherum hymenoides</i>	Paloma	3.47
Blue Grama	<i>Chondrosium racile</i>	Alma	0.42
Squirreltail	<i>Elymus elymoides</i>	Tusas	1.95
		Total	6.61

\* This reflects the drilled seeding rate of 40 PLS /ft<sup>2</sup>,  
VNS (Variety Not Specified), get most local variety available.

<sup>1</sup> PLS (Pure Live Seed). It is a number that takes into account that the germination rate of any seed lot will inevitably be less than 100% and that there is inert material in the seed lot that is not viable seed. PLS pounds/acre = bulk pounds/acre \* % germination rate - inert material.

This reseeding plan may be repeated, during subsequent growing seasons, as needed, until re-vegetation is successful. Success would be determined by the COGCC when a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site with a density (at least 80 percent) sufficient to control erosion and non-native plant invasion and reestablish wildlife habitat or forage production. Any fencing would be maintained to prevent heavy grazing pressure after reclamation and would remain in place for an additional three (3) years or until successful re-vegetation of the site has been accomplished and approved by the COGCC.

### Mulching Plan

Recent past experience suggests that mulching should not be necessary to achieve a successful revegetation of this site. Accordingly, initial revegetation efforts would be carried out without the application of mulch. However, if after a 1-year cycle of growing seasons has occurred, the site has not achieved a 30% vegetation compared to a random adjacent area transect, the following Contingency Mulching Plan would be implemented.

#### Contingency Mulching Plan

If after a 1-year cycle of growing seasons has occurred, the site has not achieved a 30% vegetation compared to a random adjacent area transect, this following Contingency Mulching Plan would be implemented.

Weed-free straw mulch would be crimped into the site surface following reseeding of the site. Application rates would be determined prior to implementation, based upon field observations of the site. Straw crimping would be completed utilizing a skid loader with crimping wheel or other suitable equipment.

### Watering Plan

Recent past experience suggests that a non-amended watering plan should result in a successful revegetation of this site. Accordingly, initial revegetation efforts would be carried out relying upon natural moisture cycles. If it becomes apparent that natural weather cycles are not sufficient to create viable seed germination and seedling survival, then the Contingency Watering Plan would be implemented.

### Contingency Watering Plan

If it becomes apparent that natural weather cycles are not sufficient to create viable seed germination and seedling survival, then this Contingency Watering Plan would be implemented.

Application of water to the revegetation sites would be accomplished using water trucks equipped with water monitor guns capable of applying water to the sites without eroding the revegetated surface on a schedule to be established in the field based upon site conditions and needs.

### Weed Treatment

Russian Knapweed would be treated, if present, immediately following the reseeding effort through use of herbicide under the approved Pesticide Use Proposals utilizing the third-party contractor Back Country Vegetation (Gary Rushing). An intensive weed monitoring and control program would be re-implemented beginning the first growing season after reseeding adhering to the existing Pesticide Use Proposals with herbicide treatments applied, as necessary during the spring and summer of each year and possibly the fall of each year for Russian Knapweed. Weed treatments may require spot spraying as opposed to broadcast spraying to minimize impacts to desirable vegetation.

APPENDIX A – Photos (from COGCC archives – Photo description from COGCC)



Photo 1. View from southwestern corner of well pad facing center. Vegetation is mainly Russian knapweed.





Photo 2. View from northwestern corner facing center. Vegetation is mainly Russian knapweed and Russian thistle.