APPENDIX F

STANDARD SEED MIXTURES
ROCK SPRINGS FIELD OFFICE

Appendix F

Standard Seed Mixtures

The following procedures will be followed by Warren E&P to assure that disturbed areas are stabilized and that revegetation efforts are enhanced.

Scarification.

- Prior to reseeding, all compacted areas would be scarified by ripping or chiseling to loosen compacted soils. Scarification promotes water infiltration, better soil aeration and root penetration. Scarification would be done when soils are dry in order to promote shattering of compacted soil layers.

Seedbed Preparation.

- Appropriate seed bed preparation is critical for seed establishment. Seedbed preparation would be conducted immediately prior to seeding to prepare a firm seedbed conducive to proper seed placement and moisture retention. Seedbed preparation would also be performed to break up surface crusts and to eliminate weeds that may have developed between final grading and seeding. In most cases, chiseling is sufficient because it leaves a surface smooth enough to accommodate a tractor-drawn drill seeder and rough enough to catch broadcast seed, as well as trap moisture and runoff. In low to moderate saline soils, a firm, weed-free seedbed is recommended. With high salinity levels, particularly when a high water table is involved, a fallow condition may not provide the best seedbed.

- If existing vegetation and weeds are chemically eradicated, the remaining dessicated roots and stems improve moisture infiltration and percolation, reduce evaporation from the soil surface, and protect emerging seedlings (Majerus 1996).

Seed Mixtures.

- Seed mixtures would be specified on a site-specific basis and their selection would be justified in terms of local vegetation and soil conditions. Livestock palatability and wildlife habitat needs would be given consideration in seed mix formulation. The recommended general seed mixtures shown in Table 2-3 were developed from observation of successful revegetation projects in the Green River Basin region and observation of dominant species in the project area. BLM guidance for native seed use is BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants). The Wyoming Game and Fish Department (WGFD) recommends that BLM consider shrub, forb, and grass species in seed mixtures.

- BLM would coordinate with the WGFD to insure that the correct shrub, forb, and grass species are incorporated into seed mixtures on public lands. Native species

to be considered include bluebunch wheatgrass, streambank wheatgrass, bottlebrush squirreltail, needle-and-thread grass and Wyoming big sagebrush.

- Fall seeding would occur from about September 15 until ground freeze or snow pack prevents critical seed soil coverage. The optimum time to seed a forage or cover crop in saline-alkaline soils is late fall (mid-October to December), or during a snow-free period during the winter (Majerus 1996). Ideally, in saline-alkaline soils, the seed should be in the ground before the spring season so that it can take advantage of the diluting effects of early spring moisture. Spring seeding would be completed by May 30 or as directed by the BLM.

- Seed would be used within 12 months of testing.

Seeding Method.

- Drill seeding would be used where the terrain is accessible by equipment. The planting depth for most forage species is 1/4 to 1/2 inch (5-10 mm). A double disk drill equipped with depth bands would ensure optimum seed placement. The seed would be separated by boxes to prevent seed from separating due to size and weight. Rice hulls or other appropriate material would be added to the seed as necessary to prevent separation. The drill would be properly calibrated so that seed is distributed according to the rates specified for each seed mix.

- Broadcast seeding, especially in areas too steep for drill seeding or where approved by the BLM, should occur onto a rough seedbed and then should be lightly harrowed, chained or raked to cover the seed. The broadcast seeder should be properly calibrated or the seeding should occur over a calculated known area so that the proper seeding rate is applied.

Mulching.

- Where mulching is deemed necessary, a certified weed-free, straw or hay mulch would be crimped into the soil at an application rate of two to four tons per acre. Mulches would be applied by blowers, spreaders or by hand. The mulch would be spread uniformly over the area so that 75 percent or more of the ground surface is covered. Mulch would be crimped to a depth of two to three inches.

Bureau of Land Management Recommended Seed Mixes

Plant Species	Variety (if applicable)	Recommended Drill Seeding Rate (lbs/ac PLS)[A]
SALINE/SODIC SOILS		
Western wheatgrass	'Rosanna'	4.0
Sandberg bluegrass		2.0
Indian ricegrass		3.0
Bottlebrush squirreltail		1.0
Slender wheatgrass		3.0-4.0
Scarlet globemallow		1.0
Gardner saltbush		2.0
TOTAL		17.0
WETLAND/HIGH WATER SOILS		
Tufted hairgrass		2.0
Basin wildrye		5.0
Slough grass		6.0
Bluejoint reedgrass		3.0
Alkali sacaton		1.0
TOTAL		17.0
UPLAND SOILS		
Thickspike wheatgrass	'Critana'	4.0
Western wheatgrass	'Rosanna'	4.0
Indian ricegrass		4.0
Shadscale		1.0
Scarlet globemallow		1.0
Winterfat		2.0
Gardner saltbush		1.0
Sandberg bluegrass		2.0
Slender wheatgrass		3.0-4.0
TOTAL		22.0-23.0

[A] Pounds/acre Pure Live Seed. (Source: USDI-PFO 1999 and Glennon 2003)

Standard success criteria would be based on attainment of total vegetation cover. Standard success criteria would be based on attainment of 50% of predisturbance cover in three years and 80% of predisturbance cover in five years. These identified seed mixes could be modified or added to by BLM, as needed or required to meet the RSFO objectives for reclamation.