

0012

# COAL SYSTEMS, Inc.

CONSULTANTS/ENGINEERS

L. G. MANWARING, P.E.  
President

P.O. BOX 17117  
SALT LAKE CITY, UTAH 84117

July 17, 1986

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Area Code 801  
261-4500

INA/015/002  
cc: K. Mutz  
Folder # 14

Ms. Kathy Mutz, Biologist  
DIVISION OF OIL, GAS, & MINING  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

DIVISION OF  
OIL, GAS & MINING

Re: J. B. King Mine  
Seed Mix - Planting Rates

Dear Ms. Mutz:

Per your recent request for information on the seed planting at the J. B. King Mine Site in the fall of 1985, please note the following:

I. MIX

A. Grasses

	<u>%</u>
Western Wheatgrass	10.1
Thickspike Wheatgrass	4.5
Streambank Wheatgrass	4.5
Beardless Wheatgrass	4.5
Blue Grama	6.8
Galleta	4.5
Indian Ricegrass	9.1
Needle and Thread	4.5
Big Bluegrass	2.3

B. Forbs

Gooseberry Globemallow	1.1
Yellow Sweet Clover	6.8
Palmer Penstemon	1.1

C. Shrubs

Fringed Sage	1.1
Fourwing Saltbush	4.5
Shadscale	4.5
Winterfat	4.5
Rubber Rabbitbrush	1.1

D. Inert

21.6

E. Crop

2.2

F. Weed

0.7

100.0



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- G. Prairie Sage: 1.2# applied at rate of 0.1# PLS/A over 12 Acres (primarily along borrow pit ditch banks).

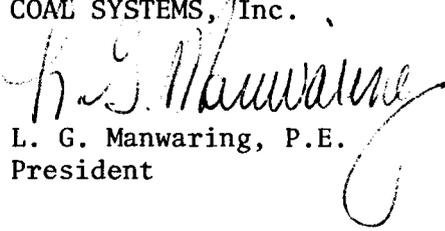
II. RATE OF APPLICATION

- A. 5 ACRES @  $\approx 20\#/ACRE$ ; drill seeding was attempted but discontinued due to un-even, rocky surface in many areas and because range in size of seeds was too great which prevented uniform feeding of the mix.
- B. 23 ACRES @  $\approx 39\#/ACRE$ ; the remaining acreage was seeded using a broadcast seeder at a doubled application rate.
- III. SEED SUPPLIER - Maple Leaf Industries, Inc., Ephraim, Utah
- IV. PLANTING TECHNIQUE - Approximately 5 acres/day were seeded, mulched and crimped. The seed was broadcast during the calm morning hours; mulching and crimping the 5 acres required the rest of the day.
- V. MULCHING - A barley straw mulch was blown over the entire seeded area at a rate of 3000#/A. The straw was inspected by a District Agricultural Inspector and determined to be reasonably weed free.
- VI. CRIMPING - The straw was crimped into the soil using a double-gang farm disc with the gangs adjusted to prevent furrowing by the discs.
- VII. FERTILIZER - As noted in an earlier memo (5/19/86 to D. Duce, copy to K. Mutz) fertilizer was applied prior to planting at a rate of 200#/A (150# Urea, 50# Double superphosphate)

This letter is a re-statement of the actual experience and supercedes any prior information relayed on this subject. I hope it provides the information you requested.

Sincerely,

COAL SYSTEMS, Inc.

  
L. G. Manwaring, P.E.  
President

LGM/bm

cc: M. O'Donnell, WESTERN STATES MINERALS CORPORATION