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MONTGOMERY WATSON

ACT 1667/607 #2

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Date: 2-27-98

To: Randy Harder

Subject: Sunnyside Mine

Company: DOGM

Fax No.: 359-3940

From: Steve Newton

No. of Pages  
(including cover): 5

The original: (  ) will not follow, or ( ) will follow by: ( ) US Mail, ( ) overnight express.

Randy

1. Enclosed is revegetation information from the permit. Please pass it on as appropriate.

2. FYI, the borehole abandonment cost quote we got was 18k to 28k, with the more likely cost on the high end.

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If you do not receive all pages, or if there are any problems with this transmission, please call me at (801) 272-1900.

Attachment 4. Approved Interim Seeding Mixture



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangertter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

November 17, 1986

Mr. Martin P. Holmes  
Kaiser Coal Corporation  
102 South Tejon Street  
Suite 800  
Colorado Springs, Colorado 80901-2679

Dear Mr. Holmes:

RE: Temporary Seed Mix for Sunnyside Mines, ACT/007/007, Folder No. 4, Carbon County, Utah.

There has been considerable discussion recently on seed mixes for temporary revegetation at the Kaiser Coal Company operations, including the Sunnyside Mine, Horse Canyon, Number 5 Mine and Wellington Prep Plant. Division staff have discussed the issues among themselves and with Susan Hasenjager. The following is the Division's position on interim seed mixes:

1. In most situations, similar techniques and materials should be used in interim and permanent reclamation for several reasons:
  - a. Interim reclamation is often in place for 30 years or more and fulfills the same function as a permanent reclamation area.
  - b. Field trials in a variety of slopes, aspects, soil conditions, etc. are important for evaluating permanent reclamation materials and techniques before they are applied to large areas.
  - c. Interim seedings will provide a soil seed source even if major regrading is considered.
  - d. Successful interim reclamation may be accepted as permanent reclamation if it does not conflict with requirements for AOC or other reclamation plans. Problems in accepting these areas for final reclamation will be minimized if an acceptable permanent seed mix is used.

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There are of course situations which will be exceptions to each of these reasons. Consideration can be given to them on a site by site basis.

2. An acceptable and inexpensive interim mix can usually be a subset of the permanent mix. Where several small areas of a number of different vegetation types or different operations may be seeded at the same time, it would be advantageous to have a basic interim mix which would be suitable for most sites. Inclusion of an additional species or two could easily be approved on a site specific basis. The addition might be an introduced species where the surrounding land contains significant amounts of it (e.g., chained and reseeded area), or for a specific wildlife use.
3. The regulations on use of introduced species (UMC 817.112) apply to interim as well as permanent seed mixes.
  - a. Introduced species can be justified if they are "...necessary to achieve a quick, temporary and stabilizing cover that aids in controlling erosion..." (UMC817.112(b)). Emphasis is added to the word "necessary". An introduced species cannot be justified in a seed mix just because it is capable of performing this function if a native species will serve the same purpose or if "quick" and "temporary" are not the primary consideration.
  - b. For interim and permanent seedings, introduced species must be compatible with the plant and animal species of the region (UMC817.112(d)) and
  - c. For permanent reclamation, introduced species must be able to "establish a diverse, effective and permanent cover capable of achieving the postmining land use" (UMC817.112(a)). Ability to coexist with natives in a diverse community is usually the stumbling block for justification of introduced species under this regulation. Ephraim crested wheatgrass is being used in a mix at Horse Canyon and Wellington. This usage should demonstrate its compatibility with both natives and other introduced species. A trial usage at Sunnyside would also be acceptable and should be proposed at Kaiser's discretion.
4. The Division staff realize that in many cases native species will take longer to establish. This reality will be taken into consideration by mine inspectors who will coordinate evaluation of problem areas and requirements for reseeded with the team biologist.

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To facilitate fall 1986 seeding at the Sunnyside Mine, Kathy Mutz and Susan Hasenjager agreed to the following mix in a phone conversation on 11/4/86:

<u>Species</u>	<u>% of seeds</u>
Sodar streambank wheatgrass	35
Great Basin wildrye	20
Secar bluebunch wheatgrass	30
Yellow sweetclover	5
Small burnett	5
Alfalpa	5

This seed mix should total about 15 PLS/ac drill seeding or 22 PLS/ac broadcast. The use of sweetclover, burnett and alfalfa are justified on their value in fixing nitrogen, performing as a nurse crop and not being overly competitive. Compatibility of burnett with natives in a mix was noted by Ms. Hasenjager. Any written information you can provide on burnett would be appreciated.

In order to avoid future confusion about interim revegetation, please provide by December 31, 1986 the appropriate replacement pages to update the Sunnyside MRP.

It has been a long and lively discussion. Hopefully this letter clarifies or at least gets the Division's position in writing. If you have any questions, please contact me or Kathy Mutz.

Sincerely,



Lowell P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

KMM:dh

cc: S. Hasenjager  
L. Kunzler  
S. Linner  
K. Mutz  
J. Whitehead

0531R/75-77

# Attachment 2. Soil Data Analyses

ACZ INC./LABORATORY DIVISION  
SOILS ANALYSES REPORT

Client: Kaiser Coal Company  
Sunnyside Mine  
Sunnyside, Utah 84539  
Attn: Mr. Doug Pearce  
CC: Ms. Susan Hasenjaeger

Report Dates: October 10, 1986  
Data Received: September 15, 1986

LAB NO.	SAMPLE I.D.	SAMPLE DATE	Saturation %	pH 1 (units)	Conductivity 1 (µmhos/cm @ 25 C)	Calcium 1 (mg/l)	Magnesium 1 (mg/l)	Sodium 1 (mg/l)	SAR	Nitrogen, 2 Nitrate (mg/kg)	Phosphorus 3 (mg/kg)	Potassium 3 (mg/kg)	Neutralization Potential as CaCO <sub>3</sub> %	Organic Matter %
86-1232-Soil	Sunnyside #1	Unknown	28	7.6	3.50	21.5	9.04	17.7	4.53	1.1	3.2	20	9.6	0.8
86-1233-Soil	Sunnyside #2	Unknown	32	7.2	1.25	10.6	3.16	0.69	0.26	23.9	8.8	45	2.0	1.2
86-1234-Soil	Sunnyside #3	Unknown	29	7.6	0.69	4.75	2.90	1.26	0.64	2.6	4.9	25	8.0	0.7
86-1235-Soil	Sunnyside #4	Unknown	31	8.0	0.94	3.60	5.56	3.24	1.51	0.5	1.0	20	12.5	0.2
86-1236-Soil	Sunnyside #5	Unknown	28	7.6	2.63	30.1	10.6	0.90	0.20	1.9	2.3	30	13.3	0.6
86-1237-Soil	Sunnyside #6	Unknown	39	7.8	4.16	28.3	16.8	19.5	4.11	5.1	1.4	45	13.0	0.7
86-1238-Soil	Sunnyside #7	Unknown	35	7.6	3.31	27.6	16.0	9.04	1.94	3.3	2.3	25	12.3	0.9

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LAB NO.	SAMPLE I.D.	SAMPLE DATE	Sand %	Silt %	Clay %	Texture
86-1232-Soil	Sunnyside #1	Unknown	78	14	8	LS, SL
86-1233-Soil	Sunnyside #2	Unknown	69	21	10	SL
86-1234-Soil	Sunnyside #3	Unknown	61	26	13	SL
86-1235-Soil	Sunnyside #4	Unknown	53	33	14	SL
86-1236-Soil	Sunnyside #5	Unknown	56	29	15	SL
86-1237-Soil	Sunnyside #6	Unknown	23	50	27	CL, SIL
86-1238-Soil	Sunnyside #7	Unknown	59	31	10	SL

1 Saturated Paste Extraction    2 Hot Water Extraction    3 MB-ETPA Extraction

*Ralph V. Poulsen*  
Ralph V. Poulsen, Director

02/27/98 11:09 801 272 0430 MONTGOMERY WALSH 005/005