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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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September 23, 2002

OK

TO: Internal File
THRU: Joe Helfrich, Team Lead *sh*
FROM: *PB* Priscilla Burton, Soils Reclamation Specialist
RE: Midterm Permit Review, Savage Industries Inc., Savage Coal Terminal C/007/022-MT02-2

SUMMARY:

Climate summary and lowland restoration issues raised during the review of amendment AM02 were deferred to the mid-term review. Information was supplied on these topics on August 19, 2002. After a preliminary review by the Division on September 2, 2002, additional information was supplied during the week of September 16, 2002.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Analysis:

The mean annual precipitation for the site is about 10 inches (Table 11-1 and section 11.1.2). The site receives most of its precipitation from August through September, making it a candidate for July seeding of warm season species. Although page 3-58 indicates that seeding will occur in the fall, a June or early July seeding is acceptable because several of the species are warm season and summer seeding will allow their establishment. If seeded in the fall, warm season species usually cannot compete with the other weed and seeded species and will not be

TECHNICAL MEMO

Findings:

The information provided meets the requirements of the Regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Savage Coal Terminal soils were surveyed in 1980 by James P. Walsh and Associates in July 1980 (MRP, Section 8, p8-1). The survey is referred to but not included with the plan. Upon request, the Permittee was not able to locate a copy of the original survey.

The following pedons were described by Mr. James Walsh at the loadout site: Billings Series; Chipeta Series; Disturbed Lands; Killpack Series; Killpack Series High Water Table Variant; Saltair Series (pp 8-3 to 8-11). All are gypsiferous soils formed from Mancos shale.

On page 8-38, the Permittee has indicated that "the disturbed soils can be upgraded as needed to provide a plant growth medium; therefore, no soil substitute is necessary for reclamation of the disturbed soil areas."

Disturbed land is described on pages 8-6 and 8-16 and in Table 8-5. The original surface layer was removed and twelve inches of gravel fill was placed over the subsoil. Below twelve inches the earth is light grayish brown, massive, hard, very sticky and very plastic, calcareous, with numerous gypsum crystals and threads. Below twelve inches the pH is 7.6 and the EC is 47.9, the SAR is 18.8 and the Nitrogen content is 72%. This soil is toxic (sodic) and will be very difficult to use as germination medium.

Findings:

The information provided is adequate for the purposes of describing the soil resource as required by Regulation.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

Section 3.5.5.2 indicates that seeding will be conducted during the summer to promote the establishment of warm season grasses during the wettest months of the year which are August, September and October.

Findings:

The information provided meets the requirements of the regulations.

RECLAMATION PLAN

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Standards for success

As shown on Plates 3-2 and 9-1 and discussed in Sections 3.4.4.2 (page 3-48) and 9.3.2.5, the reference area was set up in 1980 for the shadscale phase of the salt desert community to establish revegetation success standards for the entire mine site. Production of the reference area was estimated at 450 lbs/acre air dry and the site was rated in good condition in September 1983 by Mr. Don Andrew, Range Conservationist with the USDA SCS (MRP, Figure 9-1). The reference area was re-evaluated during the 2002 growing season by Kari Christman, Soil Conservationist with the Natural Resource Conservation Service (Figure 9-1). Mr. Christman determined that the site was in high good condition with a range of production from 350 – 400 lbs/acre on a favorable year and 100 – 150 lbs/acre on an unfavorable year. This year the reference area was producing at about 240 lbs/ac.

The instructions on the C1C2 form indicate that the 2002 range evaluation should replace the evaluation conducted in 1983. The Division would prefer to keep a historical record of the site and retain both evaluations in the record.

The Permittee has proposed a second reference area for lowland vegetation (Section 3.4.4.2), because as noted in the MRP Section 9.5 “eventual soil saturation or inundation of the low western permit area is possible upon final reclamation.” And, as noted in the MRP Section 9.2.1, page 9-2, “A sedge meadow was mapped during the original study (June 1980), adjacent to the current western permit boundary. Although no such type was actually mapped within the permit area, a low area does exist within the currently mapped Disturbed, Agricultural area, now drained by a French drain.” During recent removal of refuse, the Permittee was obliged to remove equipment from areas along the eastern boundary of the permit due to the elevated water table.

The second reference area was established in the northwest quarter of the permit area by Mr. Patrick Collins and Mr. Joe Helfrich (see field visit report FV_07172002). This area was also evaluated for range condition by Mr. Kari Christman in August 2002 (Figure 9-1).

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According to Mr. Christman, the reference site is in an alkali flat; the site is in high fair condition. The potential production ranges from 950 – 1000 lbs/acre on a favorable year to 500 –550 lbs/ac on an unfavorable year. This year the site produced about 560 lbs/ac. Data sheets for the evaluation were not included.

Savage Industries has developed a lowland mix (Table 3-2(b)) for the greasewood lowlands within the disturbed area, dated September 16, 2002. The area to be seeded with this mix is shown on Plate 3-7 Post Mining Topography and Drainage (Section 3.5.5.2). The Division has evaluated the species outlined in Table 3-2(b) for their qualities to:

- enhance the postmining land use, which is small mammal and bird habitat
- tolerate saline soil conditions
- tolerate the shallow water table.

The Shadscale upland seed mix as described in Table 3-2(a) of the MRP also has been revised and dated September 23, 2002.

As stated on page 3-58 the final mix may undergo alteration depending upon the success of the interim seed mixture.

Savage Industries has made plans for a wetland mix along the Price River Pipeline (page 3-58). This mix is found in Table 3-3. Reclamation of the pipeline will include willow plantings and streambank wheatgrass.

Findings:

The information provided meets the requirements of the Regulations to achieve revegetation success for the approved postmining land use.

RECOMMENDATIONS:

The proposal is recommended for approval.