

(c) *Development Requirements*—Commencing not later than the third year of the lease and continuing for a three-year period lessee should be required to expend no less than \$1,000,000 annually (or some equivalent acreage charge if lease sizes vary) on or for the benefit of the leased premises in research, experimentation and development leading to a program for the commercial extraction of oil from the oil shale under the leased lands. Expenditures of the same type voluntarily made in the first two years should be allowed as a credit on any succeeding year's requirement. Thereafter during the primary term the lessee should be obliged to proceed with reasonable diligence toward the same objective.

Recognizing that the First Phase of the leasing is in large part an experimental beginning designed to encourage the development of an industry, every care should be taken to prevent lessees from holding lands in idleness. At the same time, however, the lease requirements should not be so onerous as to preclude strong competition in the bidding or to preclude considerable flexibility to the lessee in the type and location of the research, experimental and development work required.

Our suggestion that the royalty be set at a 5% rate is not in the nature of an incentive to encourage activity. It is largely based upon advice to us, from persons believed to be knowledgeable, that the present and at least short-range future economic structure of an oil shale industry (i.e., at least until 1985) requires that the royalty level be at about that rate. This royalty level is consistent with historic royalties for mining ventures.

The Second Phase of our suggested program should commence simultaneously with the First Phase and should involve serious and thoughtful consideration of an improved law and companion regulations. It is suggested that this work, including all necessary studies and hearings, should easily be completed by early 1967. It is probable that by then only a limited amount of experience would have been gained from lease operations under the First Phase so that in mid-1967 (or earlier if possible) a second limited competitive bidding program should be offered, hopefully, but not necessarily, based on improved laws and regulations.

The Third Phase to follow should be a continuation of the step-by-step philosophy, including a continuation of improvements in the law and regulations looking toward a fairly definitive policy and program no later than 1970. Before this time there should be available important and usable experience factors and data which should aid in formulating a good and workable system.

Suggested improvements in the law and regulations (which need not be accomplished to permit the First Phase to proceed) should include:

(a) The right of lessees of leases issued under the First and Second Phases to exchange their leases for the more modern forms sure to result from improved laws and regulations.

(b) Clear recognition of the right of lessees to unitize or pool leases under a common plan of development and operation. It is apparent that either mining or *in situ* operations of the magnitude which will be required can best be conducted under such a plan and that the commitment of large reserves to a single plant or pipeline is essential to permit the very large financing that will be required. Unitization is also historically one of our most effective conservation devices. In this connection we believe that Colorado can be encouraged to adopt suitable oil shale conservation and mine safety laws which will remove fear of anti-trust violations and permit continuation of the fine relationship which exists between our conservation and safety agencies and the United States Geological Survey and the Bureau of Mines.

(c) Without respect to what is done about the acreage limitation, a lessee should not be limited to one lease. It is essential that some flexibility in this matter be possible so that rearrangements of holdings may be made to reach the most efficient development and operating patterns of ownership.

(d) The acreage limitation should at least be enlarged to permit a lessee to hold 5,120 acres in each state. In fairness to our sister states of Utah and Wyoming, the door should be opened to encourage prompt development in every state. Generally, there does seem to be merit in increasing the acreage limit above 5,120 acres at least as to tracts having lower grade reserves. In fact, once a reasonable number of operators have affirmatively entered the picture, there may be no reason not to permit a sizable increase in the acreage limit. In operations of this magnitude, the economic forces