

will apply criteria of success different from industry in general and wipe out the investment in development by denying adequate reserves for commercialization.

3171.2(c)(11) requires "a description of the reserves owned or controlled by the applicant of oil and other minerals believed present in the land applied for." This statement needs clarification. Whatever information is requested, we hope that it would not be used to deny a lease covering federal lands to companies that have been forward looking and have invested in private reserves.

3172.2(b) states that the Secretary will extend the term of the lease to permit commercial production if certain tests are met. These tests are not spelled out with respect to "optimum recovery of minerals" and air and water pollution. We recommend that these provisions be made specific before any leases are granted. Otherwise, nonuniform application of limits, variations of limits, or designation of new criteria after the development phase is completed could wipe out the investment in development.

3172.3(c) states that "the Secretary will determine the quantity of mineral deposits needed for commercial production, allowing reasonable reserves." This lacks definition as to project life and thus precludes definitive economic analysis. There should be a statement of the project life that will be permitted before development is started. This of necessity will determine the reserves needed on the basis of the mining program proposed. For example, a change from reserves permitting a twenty-year project life to reserves permitting a fifteen-year life could render such project unprofitable.

3172.3(d) states that no corporation can hold an interest in more than 5120 acres of oil shale land. This could be construed as meaning an undivided interest, no matter how small, in one such tract would preclude interest in any other 5120-acre tract, private or public. It is recommended that this be clarified to state that a "net" interest of no more than 5120 acres in United States oil shale leases may be held by a lessee at any one time.

3172.5(b) states that the royalty shall be "3 percent on the gross value at the point of shipment to market, of the mineral products from the oil shale, . . ." This could be construed as applying to raw shale oil sold at the plant gate in Western Colorado, gasoline produced at the Colorado plant and shipped to market, or gasoline produced at a midwest refinery from shale oil. We recommend clarification because this regulation could promote inefficiency by forcing intermediate sales and precluding integrated plant complexes.

3172.5(d) states the royalty rate as a percentage of net income related to depreciated original cost. The disappearing base would have the effect of putting much of the net income into the high royalty bracket near the end of a project. The total portion of net income going to federal income tax plus royalty could reach 80 to 90 percent for a project having even a modest profitability before royalty. This will discourage both corporate and private investment. We therefore recommend reconsideration of the royalty rates.

3172.9(d) says that the lessee does not own the data or information from the project at any time and that no research personnel could publish technical papers on their work without the approval of the Secretary. We feel that the lessee should own the data and be able to use or sell them without government restriction. At most, the Department of Interior should receive reports to show due diligence in prosecuting the research and these should be held confidential for at least five years. We feel that confidentiality of data and design information will do much to foster competition in a developing shale oil industry. We would not object to a requirement of licensing at reasonable royalty rates after some waiting period.

3172.9(e) states that the public will acquire title to all patents and inventions made in the course of the lease, except where proper showing of exceptional circumstances is made. This is one of the most critical points for private companies and investors. It would seem to place a premium on waiting and letting others do the early development. It basically says that the lessee may make development investments of many millions, and then must give all the results away. The lessee would have no chance to recoup through licensing the moneys risked on research; this has been the heart of the free enterprise patent system. Many companies or individuals might prefer to wait and let someone else do the development and then apply for commercial leases to utilize the results without risk or prior investment. The "proper showing of exceptional circumstances" appears to be a formidable obstacle; some members of the proposed Bronco project consortium feel that this question may compromise the whole project.