

COLORADO SCHOOL OF MINES OIL SHALE SYMPOSIUM

JOHN A. LOVE

I welcome the opportunity to discuss with this distinguished group a subject which is of such paramount importance to our nation and to the State of Colorado.

At no time in the past has there been more unanimity among the private and public sectors of our economy that the oil shale of Colorado, Utah, and Wyoming will be needed to supplement our growing national energy requirements. The years of preparation and the millions of dollars which you and the organizations you represent have spent in research and other activities are about to bear fruit.

We in Colorado welcome you and are prepared to assist in every way possible in the development and growth of the oil shale, nahcolite, and dawsonite industries.

Substantial research efforts by both private industry and the federal government over the past 20 years have resulted in the development of a large body of technology in mining, retorting, and refining of oil shale and its products. Whatever the problem, you have been resourceful in finding the solution. Today, we have a proven mining system available, with others under consideration and study. Today, we have not one, but at least four above-ground retorting processes at various stages of development. Today, we have improving technology for converting shale oil to useful end-products. In summary, today we have a body of experience available to produce shale oil as a supplement to other existing sources of domestic liquid fuels.

It may be well to point out here that what we have been calling the "Oil Shale Industry" may turn out to be a very different one—a multiple-minerals industry. The United States is the world's largest consumer of aluminum and an importer of 90 percent of its requirements. Needless to say, the occurrence in Colorado of substantial deposits which can be developed as a source of aluminum would be of great significance to our nation's economy as well as to the oil shale industry.

The answer to those who ask, "Is there a need for shale oil?", is *Yes!*—unless we are prepared to accept, within the next decade, the alternatives of (1) reliance on external sources of energy vulnerable to the changes and pressures of international political and military developments; (2) alteration

Governor, State of Colorado

of our industrial and transportation base to accommodate less convenient fuel sources; or (3) the uncertainties of substitute energy sources.

In 1966, the United States imported approximately two and one-half million barrels of oil, the bulk of which came from Venezuela and the Middle Eastern countries. While it is important that we continue our friendly relationships with these countries, both economic and strategic considerations require that we not rely entirely on these sources.

In September 1963, President Kennedy requested the heads of nine federal departments to undertake a comprehensive study of "the development and utilization of our total energy resources to aid in determining the most effective allocation of our research and development resources." This interdepartmental study resulted in a report entitled, *Energy R & D and National Progress*, known as the Cambel Report. In a summary memorandum of this report produced by the interdepartmental Steering Committee in 1966, we note that the cumulative projection of energy requirements for the period 1960 to 2000 is estimated at 3.2 quintillion BTU's. The requirement for liquid hydrocarbons (petroleum products) is 1.4 quintillion BTU's, or 46 percent of the total. Yet, for the same report, known reserves of crude oil and natural gas liquids recoverable by primary and secondary recovery methods under present economic and technological conditions are equal to only .3 quintillion BTU's, or 2 percent of the requirement for this forty-year period.

Of course, no one questions that we will continue to add to our petroleum stocks by continued exploration for and development of conventional resources. The only questions are, at what cost and at what rate?

Oil shale, as a source of these liquid hydrocarbons, must compete with new discoveries of petroleum, tar sands, and coal to meet these increased demands. Liquid fuels, in spite of their convenience and acceptance in our present society, must compete with other energy sources—coal, gas, hydroelectric, nuclear and solar. We are fortunate to have so many alternatives. In my opinion, all will be needed, all will be developed—and this will be done without dislocation of our economy, unless we delay too long; and in this connection, I would urge that the Department of Interior note with care the measures adopted by the Canadian government to encourage the development of the tar sands industries.

It is a paradox that our government has spent billions of dollars in the development of other energy resources, while at the same time pursuing a policy of frustration and delay in dealing with the oil shale industry.

One of the most encouraging developments of the last year has been Secretary Udall's recently announced Five-Point Program because it reflects an increased awareness on the part of the present administration of the im-

portance of oil shale and associated minerals to the nation's economy and the need for action in encouraging rather than discouraging their development.

We are not only pleased by the various elements of the program itself, but are gratified by the stated objectives of the program which the Secretary enumerated in his testimony before the Senate Committee on Interior and Insular Affairs on February 21 of this year. In emphasizing certain goals, Mr. Udall made several significant statements of policy which evidence a sound, overall philosophy. I quote as follows.

1. "The central core of this effort to get oil shale into the mainstream of the American economy is aimed directly at development of the resource itself. . . ."

2. "Our objective is to get the broadest kind of industrial participation, either through a number of individual companies or through joint venturers. . . ."

3. "Heavy emphasis will also be placed on maximum recovery and development of all the minerals present—sodium and aluminum as well as oil shale. . . ."

4. "We will take particular care to secure and evaluate the voices of the three states involved, since we are acutely aware that they have a deep interest in the subject and that their cooperation is essential to the adoption of total conservation measures.' "

In connection with the last stated objective, you will be interested to know that on May 4, 1967, I, together with the Governors of our sister states Wyoming and Utah, plan to meet with Secretary Udall to discuss other measures in addition to his Five-Point Program which will aid in forwarding oil shale, nahcolite, and dawsonite development.

Before turning to these additional measures, I would like to comment in passing on one phase of the Secretary's research program and two aspects of Interior's recent handling of these resources.

While we are always interested in scientific research in areas calculated to stimulate the economy of Colorado and to preserve its natural beauties, we would caution against too much reliance on the successful outcome of experiments in in situ production through atomic explosions. It is never sound to rely solely or primarily on one line of attack, particularly an experimental one, to the detriment of established techniques. We do not believe that attention to this in situ effort should be permitted to divert energies from large-scale development by underground or other mining techniques already known to be feasible. The effect of such an explosion upon nahcolite and the aluminum compounds creates additional complexities to the problem of sustaining combustion of underground solids. In this con-

nection. I can think of no more suitable project for the Colorado School of Mines Research Foundation facilities at Anvil Points than an interim, scaled-up experiment in in situ production to bridge the gap between the bench experiments of the Bureau of Mines at Laramie and the proposed Bronco experiment.

There is another subject to which I, as a lawyer as well as the Governor of one of the nation's great mining states, must direct your attention. During the past several months Department of Interior officials have devoted considerable time and space to their views of the responsibilities of the Department in the administration of mining laws. There is no question of the role of department officials as trustees of the nation's resources, but I would add that these fiduciary obligations also extend to that portion of the public which is entitled to rely upon the assumption that proper administration of the mining laws must have as its objective the carrying out of Congressional intent.

The rights and obligations of the Government and mining claimants have long been defined by statute and court interpretation. The policies behind the mining laws have stood for more than 95 years. The intent of Congress to vest in the prospector who made a valuable discovery and perfected his claim through appropriate location procedures an interest in real estate which is taxable and inheritable and as fully transferrable as any other interest in real estate, is beyond question. It is apparently the view of some individuals in the Department that these laws and the policies behind them are now anachronisms: and that an executive agency has the right, without the sanction of Congress, to place upon these laws which have been well understood by the industry and by the public, new interpretations tending to vest in the Federal Government the role of prosecutor rather than administrator. Such a view, I submit, is inimical to the development of our country and inconsistent with our basic concepts of government.

While I recognize that changes in the mining laws are inevitable, and even desirable, and look forward to the recommendations of the Public Land Law Review Commission for future action in this area, I cannot agree that it is the function of the Department of Interior to legislate. If there is dissatisfaction with the laws under which the Department is charged, then the forum is Congress and there should be presented to that body reasons for and suggested changes in the laws now governing these matters. It is only when we recognize and respect the separate prerogatives of the Legislative, the Judicial, and the Administrative branches of Government that we can go forward to meaningful and constructive solutions of the complex problems which confront us.

The Department complains that a vast area of land which should be available for leasing under the Leasing Act of 1920 has now been cluttered with unpatented dawsonite mining claims. These claims now confront the Government with gigantic expenditures of time and effort to test their validity. While I recognize the magnitude of the problem and sympathize with the Department of Interior, let us place the responsibility where it belongs. It was the Department of Interior which first learned of the existence of dawsonite and which first released to the public information which led to the staking of the claims in question—a result highly predictable in view of the conduct of the American public in past similar situations. Had the Department acted promptly in anticipation of what was likely to result from its own disclosures, it could have, by a timely withdrawal of these lands and a prompt classification of the minerals discovered, prevented a tremendous expenditure of effort and avoided the confusion now confronting both government and industry.

It is not my intent here to engage in destructive criticism by these comments, but rather to point out that the public is entitled to prompt and responsive administrative action and that undue delay tends to increase rather than diminish the complexities of the Department's problems.

There are at least four steps, in addition to those proposed by Secretary Udall, which could and should be taken to get oil shale into the mainstream of our economy. Two require action by the Federal Government.

1. *Depletion Allowance.*

The Treasury Department should eliminate the discriminatory tax treatment against oil shale which now exists because of administrative interpretations of those portions of the Internal Revenue Code dealing with the depletion allowance.

The Internal Revenue Service has taken the position that under the Federal Tax Law the depletion rate applicable to oil shale is limited to 15 percent. The Treasury Department has indicated it will apply the rate to the value of mined and crushed shale rock rather than to the value of the first oil produced at the retort. Approximately one-half the costs of production of the initial oil product are those costs related to mining and crushing. Thus, the value of the mined and crushed rock would be approximately half the value of the oil. Applying the 15 percent rate to the crushed material, therefore has the anomalous result of reducing the depletion allowance for oil shale to 15 percent of one-half the value of the extracted crude oil. If the proposed depletion treatment of oil shale as a petroleum source is compared to the treatment of conventional petroleum, or if shale oil that is mined and retorted

is compared to shale oil produced by in situ retorting techniques, the inequity of such a program becomes apparent.

The questionable, if not unreasonable, situation, which I have pointed out, is clear to the executive departments concerned. Corrective measures can and should be undertaken now by the proper policy revisions. The time for a reformed and progressive policy has arrived. Shale oil should be given an opportunity to compete in the marketplace. Competitive discrimination in the tax laws against one type of petroleum production ought to be promptly eliminated.

2. *Oil Import Regulations.*

As a second and very important step, the Federal Government should clarify its policy dealing with the qualification of shale crude oil as a refinery input for purposes of import quota allocation. The present import regulations are unclear as to whether domestic shale crude oil will be treated as a qualified refinery input like all other domestic crude production. The uncertainties created by such hazy regulatory language should be removed. The primary objective of the import quota system to maintain a vigorous domestic petroleum industry would be seriously jeopardized without the necessary corrective action.

There are two other areas which can and should be appropriately dealt with primarily at the state level. Your state government is not only aware of these important problem areas but is prepared to move ahead with constructive programs in each one.

1. *Water Resources.*

First, the State of Colorado, in cooperation with the Federal Government, can contribute meaningfully to the development of oil shale in water resource planning and development. I have noted with dismay the Secretary's latest plan for the Colorado River Basin, which defers the West Divide Project and others important to Colorado. We intend to press for an immediate authorization of the West Divide Project. In the White River Basin the feasibility report on the Yellow Jacket Project is now almost completed. This would be a major project to provide industrial water supplies in that area. Under a cooperative venture with the United States Geological Survey, we are now bringing to completion a survey of the ground water resources of the Piceance Basin.

I have asked the legislature for an appropriation, part of which will be used to fund a study of water resource development specifically designed to meet the needs of the oil shale, nahcolite, and dawsonite industries and to devise a plan for the supply of water for the development of these resources through the Colorado River Water Conservation District, or such other local

quasi-municipal authority as may be appropriate, in cooperation with the Bureau of Reclamation and private industries.

2. *Conservation.*

Second, the imminent development of an industry on privately owned and federally held lands in Colorado requires immediate attention to and planning for resource conservation and the abatement and prevention of air and water pollution. Colorado has taken a position of strong leadership in these fields and we will continue to discharge our responsibilities at the local level where the problems are and where the people affected reside.

Sound conservation practices require that maximum economic value be recovered from the shale and that the residue be left in such condition that it will not be a nuisance to those who reside in the area or who depend on the water from the streams that flow through the area for life and livelihood. This applies whether the shale is processed in a surface plant or by in situ operations and whether underground or strip mining is involved.

There is a community of interest in the problem of spent shale disposal between the land holders, both private and federal, and the citizens of the State. If we work together in solving these problems, I am confident that criteria and methods acceptable to all concerned will be quickly found.

In this connection, I am prepared to request a substantial appropriation from the State Legislature to be used for studying the problems and for developing proposals for research projects in the field of spent shale disposal. With this seed money available, we will be able to identify the problem areas; to determine what research programs are necessary; and to prepare detailed proposals for such programs.

In conducting the research and development programs which will stem from these proposals, we would expect and will seek the support of both industry and the Federal Government. I note with interest that the Department of Interior, in the proposed oil shale resource development program announced in February of this year, estimates that 3.5 million will have to be expended over a 10-year period in research on the "Impact of an Oil Shale Industry on the Environment." Our great private and state universities, with their affiliated institutions for the conduct of research and development, are eminently qualified for conducting research relating to spent shale disposal, prevention of stream and air pollution from this source, and other attendant problems.

In closing, I will summarize by saying that if we at state and federal administrative levels will address ourselves promptly to eliminating the iniquities of federal depletion policy and the uncertainties of import regulations, to assuring ourselves of an adequate and orderly water supply and

to the conserving of our resources, I am confident that industry is prepared to furnish the technology and capital necessary to press to fruition the promise of oil shale and its associated minerals.