

CHAPTER 2

An Initial Attempt at Oil Shale Leasing
(1963-68)

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Introduction

In 1963, Secretary of the Interior Udall was strongly encouraged by Western-State political interests to create a Federal oil shale policy. In response to this pressure, the Department of the Interior (DOI) organized an advisory board of private citizens to analyze the constraints on oil shale commercialization and to recommend procedures for initiating and managing development of public oil shale resources. In 1967, DOI incorporated some of the board's suggestions in a tentative leasing proposal that was withdrawn after public review. DOI's approach to leasing was substantially revised after additional study, and in

1968, DOI offered three Colorado lease tracts to private industry. No acceptable bids were received, and the leasing program was terminated.

Although it failed, the 1968 lease offering triggered a series of actions that led to the current Federal Prototype Oil Shale Leasing Program. Many of the attitudes, imperatives, and impediments that shaped the 1968 attempt also influenced the evolution of the Prototype Program and its implementation in 1973 and 1974. This chapter describes the evolution of the 1968 program and discusses the reasons for its failure.

The Political Environment

As noted in chapter 1, the Secretary of the Interior was given authority in 1952 to lease Federal oil shale lands in the Western States, but DOI pursued a course of inaction for fear of scandals and because no urgent need was felt for new fuel sources such as oil shale. In the 1960's, congressional delegates from Colorado, Utah, and Wyoming responded to DOI's inaction by urging Secretary Udall to formulate a development policy for Western oil shale. Particularly active were Colorado Representative Aspinall, Chairman of the House Committee on Interior and Insular Affairs, and Senators Allott of Colorado, Hansen of Wyoming, and Moss of Utah on the corresponding Senate committee. These proponents of oil shale development were supported in principle by Senator Bennett of Utah, Senator Dominick of Colorado, and Representative I Harrison of Wyoming. Congressional advocates were aided by the Governors of Colorado, Utah, and Wyoming who differed in their specific motivations and objectives, but were unified in their efforts to

enhance the economies of their respective States.

The proponents of private development of public oil shale lands expressed their desires to enhance economic stability and to counter the threat to national security posed by the Nation's diminishing petroleum reserves and growing reliance on imported oil. Working against their efforts were legislators such as Illinois Senator Douglas, Senator Proxmire of Wisconsin, and Senator Hart of Michigan. These men emphasized the need for protecting the public's mineral-resource heritage and avoiding an oil shale monopoly by the major oil companies. Pressure from both advocacy positions affected all phases of Secretary Udall's attempts to develop an effective oil shale policy.

At the same time, several articles appeared in the public press that were unequivocally concerned with the hazards of encouraging private control of the public lands. An example is the work of Mr. J. R. Freeman,

editor of the *Farmer and Miner* newspaper of Frederick, Colo., and a long-time critic of private oil shale developers. Beginning in 1965, Mr. Freeman published a series of 38 articles entitled "The Multi-Billion Dollar Grab of Oil Shale Lands," which alleged fraudulent efforts on the part of private individuals, corporations, and Government officials to dispose of the public oil shale lands.

Mr. Freeman's style was provocative, and many of his allegations were controversial. However, his views reflected those of numerous citizens who were dissatisfied with the Government's management of public resources. He was perhaps the most vocal opponent of Udall's leasing efforts, and he periodically referred to the Teapot Dome scandals to characterize his concern about the DOI program. At Senate hearings in 1967, he presented a written statement that included the following claims and allegations:¹

Let me make one point crystal clear, I am for development of the West's oil shale resources. I want progress, but I want real honest-to-goodness development of the public lands for the public benefit. I do not want: (1) Enrichment of speculators who use phony oil shale mining claims filed 47 years ago to buy public land containing 3,000,000 barrels of shale oil per acre for \$2.50 per acre and then sell them to the oil companies for \$2,000 per acre. (2) Transfer of the public domain to the control of a few monopolists who lock up the oil shale so it won't compete with their Arabian and Texas oil. (3) Disposal of the public oil shale lands or leasing of large blocks of oil shale lands before the recovery processes are developed and the real values are made known to the public, (4) Robbery of the public through fraudulent, conniving, collusive or self-serving actions by public officials who are in cahoots with speculators and oil companies. Indeed, Gentlemen of the Senate, present Department policies are leading directly to these undesirable and deplorable consequences . . . I must report to this distinguished body that I have found key officials and employees involved in handling oil shale in the Executive Branch, especially in the Departments of the Interior and Justice, and in the Legislative Branch, sadly lacking in honesty, and openness.

Another analysis was offered by Mr. Chris Welles in *Harper's Magazine*. Welles, an associate editor for *Life* magazine, appraised the oil shale situation and pointed out that DOI's leasing efforts had been, and would continue to be, influenced by strong political forces, both favoring and opposing private development of the public's resources. He pointed out that little credence was given in Congress to claims of scandals. However, he expressed concern that the oil industry was moving into a position of control and described congressional attempts to counter these moves as follows:²

While the oil industry's attempts to dominate shale research are well-documented, it is impossible to verify the recurrent allegations about a Teapot Dome-size scandal—a giant giveaway amounting into the billions of dollars. What does emerge clearly is the fact that the government under dubious circumstances allowed oil companies and land speculators to gain ownership of many thousands of acres of rich shale land, and readily acquiesced to the oil industry's concept of a prudent Federal shale policy . . . Senator Philip Hart of Michigan sees shale oil development as a means of reducing the monopolistic power of the oil industry (which has lately been expanding into many other energy industries, including coal and nuclear power). Senators Robert Kennedy and William Proxmire—among others—sponsored legislation designed in part to accomplish this,

Similar concerns and analyses were provided by Julius Duscha in an article in the *Atlantic Monthly*. Mr. Duscha, a member of the national news staff of the *Washington Post*, described the congressional climate as follows:³

. . . the controversy over the shale oil lands involves a cast of strong characters in positions of power and influence . . . The most influential proponent of immediate leasing is Congressman Aspinall . . . representative of the congressional district containing the richest of the shale deposits . . . "Natural resources were placed there to be used," Aspinall maintains, "not to be cooped up for future generations . . . The oil isn't worth a

hoot to anybody as long as it is in the ground.”

Mr. Duscha provided the following recommendations for a national oil shale policy:

... if the public interest is to be served, Udall—and President Johnson—must first make certain that no legislation is pushed through Congress forcing the government to lease its shale lands before their true value is known and before the cost of taking the oil out of the rock is determined . . . The government does not, however, necessarily have to develop the shale lands itself, What is necessary is that the government protect the public interest in this great resource, once private development of these Federal resources is permitted . . . Large tracts of land are not needed for experimental work, and if it is necessary, the government can lease small sections of its shale lands to facilitate research.

Colorado Senator Dominick responded by contrasting Duscha’s premises and conclusions with those of Mr. C. E. Reistle, chairman of the board of Humble Oil and Refining Company. Mr. Dominick made the following comments on the floor of the Senate in 1966:⁴

... I do not agree with (Mr. Duscha) on his analysis of the problem or his approach in the article . . . The article (by Mr. Reistle) shows quite clearly, in my opinion, the need for new energy resources in our country, resources which are not subject to being shut off in the event of national emergency . . . This shows the absolute futility of taking a natural resource of this size and leaving it in the ground where no one can get at it. We have been urging the Secretary of the Interior to establish rules and regulations for the leasing of those properties, I think it is important that that be done instead of putting it on the shelf as has been done, awaiting further action and apparently waiting further development of research programs now going on.

Senator Allott of Colorado was also discontented with DOI’S hesitation and with what appeared to him to be a preoccupation with avoiding scandal. Mr. Allott made the following comments during a dialogue with Secretary

Udall at the Senate oil shale hearings in 1967:⁵

... I am afraid that in a sense we are all affected with the Teapot Dome Syndrome. I am sure that neither the Secretary nor any of his assistants nor his administration are going to be involved in anything which would effect a situation which would result in a monopoly or a windfall to any company if it can possibly be avoided . . . So I hope that this syndrome, which seems to pervade much of your discussion and thinking, can be discarded with the concept that no one (is) looking for such a windfall.

Senator Allott was also concerned about the effects of delays at the Federal level on the long-range economic viability and commercial attractiveness of the oil shale industry. He made the following statement regarding the problems of establishing an industry in competition with conventional petroleum and alternate synthetic fuels:⁶

there would seem to be plenty of room for everyone sincerely interested in developing an oil shale industry both in terms of shale land and in terms of market opportunity. However, in the final analysis the need for and the emergence of an oil shale industry will be determined on a basis of economics, Oil shale will have to compete with other energy sources and fuels . . . It would be most unfortunate if oil shale’s inability to compete was as a result of either government action or government inaction, because it would deny us the many benefits that could result from such an industry . . . I am very strongly of the opinion that we are at the point where, unless we can provide sufficient incentives to private industry, those people who would normally be interested in development of an oil shale process will turn to coal because of blocks put in their way, and . . . our oil shale industry . . . might even be wrapped up forever and completely bypassed in favor of other energy resources. I am sure that the Secretary does not want to see this happen any more than I do.

The opinions expressed by oil shale proponents in Congress were echoed by the Govern-

nors of Colorado, Utah, and Wyoming, who provided statements for the record of the Senate hearings that were convened in February of 1967 to consider a preliminary draft of Udall's initial leasing proposal. Colorado's Governor Love provided the following expression of support:⁷

The earliest possible development of our oil shale resource is essential to assuring a solid long-range supplement to our domestic petroleum supply . . . The problems which now obstruct the development of our oil shale deposits are many and complex, but they are not insoluble. It is apparent, however, that a prompt and vigorous start must be made to achieve even such a long range goal as a respectable capacity to produce oil from oil shale not later than 1975. To decide to wait until all of the problems have been identified, studied, and solved would, because of the constantly changing effect of other economic factors, be tantamount to a decision *not* to foster the development of oil shale and in fact to discourage it. While we do not counsel hasty and ill-considered action, we are convinced that the immediate removal of certain major obstacles to oil shale development could assure that operations would permit an industry be commenced in due course.

Wyoming's support was equally positive, but was tempered by concern that a large-scale leasing program could interfere with the trona mining industry, which was recovering sodium carbonate and bicarbonate from the oil shale beds in Sweetwater County, Wyo. Governor Hathaway provided the following statement to the Senate hearings:⁸

I did want . . . to express before your Committee the great interest which Wyoming has in the development of oil shale and associated minerals. Secretary of the Interior Udall's announcement on January 27 of a five-point oil shale development program signals, we hope, a recognition by the Federal Government to bring our vast oil shale reserves into commercial production as early as possible . . . In summary, Mr. Chairman, let me say that Wyoming stands foursquare behind the immediate development of an oil shale and associated minerals industry.

Utah did not have an associated minerals industry, but the State did own substantial oil shale lands. Governor Rampton's statement conveys his support of oil shale development and the desire of the State to participate through leasing of its lands:⁹

We are making available for lease to private industry our State owned deposits of oil shale and will continue to do so. We believe that the demand for energy will be such that conventional oil and gas resources will not meet our needs during the 1970's. Consideration of economic and national defense indicate need for development of a domestic synthetic fuel program . . . We urge that the program be implemented to allow private industry to develop both the State owned and the federally owned oil shale reserves,

As discussed later, Udall's initial leasing proposal was released for public comment in May of 1967. It offered leases, but restricted initial activities to research and development (R&D) on small areas of the lease tracts. No commitment was made to allow subsequent commercial operations on the same tracts. The initial proposal was strongly criticized by congressional delegates from Colorado, Utah, and Wyoming. The following statement by Utah Senator Bennett is typical of their reactions:¹⁰

I feel that the Department of the Interior should modify the proposed leasing regulations so that a healthy, comprehensive and ultimately profitable private industry can be developed on the public oil shale lands. The regulations as written will not, in my opinion, achieve that objective. I believe that the objective can best be achieved by strengthening private industry's role in developing the oil shale potential . . . I do not believe Government can match the efficiency and economy which are the natural results of industrial competition . . . I would suggest that perhaps Congress should assume the initiative in writing into law what I consider to be a reasonable and responsible leasing policy. In any event, I assure you of my continuing interest and support in Congress for early oil shale development.

Senator Dominick expressed his concern over the authority given to the Secretary of the Interior to select among lease applicants and to determine whether the results of the preliminary R&D efforts justified subsequent commercial leasing. His statement includes the following

Although the participation of private enterprise is clearly contemplated, almost no incentive seems to be offered to encourage the same. What does one gain by engaging in the research and development program? Frankly, an onerous responsibility and far too much discretion have been placed with the Secretary of the Interior.

In contrast, others in Congress raised equally strong objections to terms that appeared too lax and that might have permitted private development without significant returns to the public. This viewpoint was expressed at the Senate hearings by Senator Proxmire as follows: 12

... we appear to know virtually nothing about the full extent or value of this precious resource and very little about development costs, problems, and processes . . . I have seen no evidence to indicate that it is essential, or even desirable to develop these shale oil reserves with the haste exemplified by the Secretary . . . Naturally the Secretary is under severe pressures from within the oil industry to proceed with a development plan.

But it is up to your Committee, Mr. Chairman, to put a brake on the present headlong rush to lease this land . . . The stakes are too high, and the public interest is too transcendent, the pressures are too great, and the questions are too many to permit these decisions to be left to administrative discretion . . .

In summary, the political environment when DOI was formulating its leasing policy was characterized by strong and conflicting opinions, statements, and pressures. On [he one hand, oil shale proponents in Congress, in the governments of the affected States, and in the oil industry favored development in the interest of economic benefit and national security. On the other hand, some vocal private citizens feared that private access to the Federal oil shale lands would lead to scandal and abuse of the public trust. This viewpoint was conveyed most strongly by Mr. Freeman, Other citizens and legislators feared that hasty action by Interior would lead to an untimely disposal of public resources and to profiteering by private industry.

It is likely that pressure from all sides affected Udall's oil shale activities. Pressure in favor of rapid leasing undoubtedly spurred his efforts to prepare and promulgate leasing regulations. Counterpressures undoubtedly shaped the format and content of those regulations.

Energy and the Economic Environment

The energy situation and the economic environment in the early 1960's did not encourage heavy capital investment in a synthetic-fuels industry. Petroleum imports were restricted by quotas promulgated under President Eisenhower's Mandatory Oil Import Control Program. Production of domestic oil was still increasing, and oil prices in constant dollars were actually declining. The principal concern of domestic producers was that the quotas might be lifted, triggering a flood of underpriced foreign oil,

In the mid-1960's, this situation shifted as the Department of State began to encourage foreign trade under the mandates of the Trade Expansion Act of 1962. Petroleum imports were initially excepted from the expansion policy because of their threat to the domestic oil industry, which was generally recognized as important to national security. In 1965, however, the State Department took the position that increasing oil imports would be in the national interest, Particular attention was given to the importance of Venezuela's

petroleum industry to the economic and political stability of that country. In 1965, Assistant Secretary of State Douglas MacArthur II noted that: 13

increasing prosperity for the Venezuelan "petroleum industry is essential if the country is to remain an effective democracy and a keystone in our relations with Latin America.

This policy was reflected in other executive branch departments, including DOI. Secretary Udall regarded relaxing import quotas as a viable mechanism for encouraging competition and efficiency within the domestic petroleum industry. This position was clearly expressed by Frank J. Barry, DOI Solicitor, in an address to the 1965 Oil Shale Symposium. 14

The basic justification for the (oil import) program is the assumption that if this country became involved in a war, foreign oil supplies would be cut off and we would be dependent exclusively on domestic production. Therefore, the rationale goes, it behooves us to maintain an adequate domestic productive capacity. Hence, oil imports are restricted to a level which will not eliminate domestic producers from our own market and will justify their continued search for new oil fields and their improvement of refining techniques. Foreign oil, however, is highly competitive and its cheapness tends to sharpen the wits and encourage the perfection of the technical skill of domestic producers . . . You should note that . . . the worst feature of protectionism, namely, higher costs to the ultimate consumer, is limited by substantial import levels for cheap, highly competitive foreign oil.

Early in 1966, Udall began to rescind quotas on crude oil. Marked increases occurred in the quantities of petroleum that entered the Nation through eastern seaboard ports, despite the protests of domestic coal and oil producers, railroads, and utility companies, 's Udall subsequently announced that he favored eliminating quotas for refined products such as residual fuel oil.¹⁶ Further reductions in import restrictions occurred in September of 1966, shortly before Udall announced his tentative leasing regulations for oil shale lands. '7

Oil imports were of concern to domestic energy companies considering involvement in Interior's oil shale program. As discussed below, domestic petroleum production was increasing, but reserves were declining, and efforts to locate new ones were largely unsuccessful. The companies had several options to assure a reliable flow of oil to their refining and distribution systems. First, they could continue exploration in the continental United States. Second, they could explore nonconventional areas such as Alaska and the Continental Shelf. Third, they could increase their reliance on imported crude and refined products. Fourth, they could develop synthetic liquid fuels from coal or oil shale.

Their strategies were affected by a number of technical, economic, and political factors, including individual corporate positions with regard to long-term petroleum and natural gas reserves, availability of investment capital, expertise in technologies for synthetic fuels, and Government policies. At the time that Udall's leasing proposals were being circulated, DOI's actions must have implied that the executive branch had adopted a policy of encouraging oil imports. This policy must have discouraged serious consideration of oil shale.

The Interim Report of the Oil Shale Advisory Board also was discouraging. Although several members emphasized the importance of developing oil shale as a national energy resource, Mr. Galbraith's opinion expressed the opposite point of view:¹⁸

There is no showing of urgent economic or strategic need for oil from shale in the present or near future . . . Imports . . . are almost certainly cheaper than oil from shale by prospective processes. Hence, there is no pressing peacetime need for oil from shale. Given the most rapid development, the share of oil from shale in total production will be negligible for many years. Hence, it will not, in the foreseeable future, be an important wartime resource replacing any important present supply of petroleum. We cite this because strategic arguments are regularly advanced for oil shale development. They appear to reflect only the common effort to find a nation-

al security justification for action that individuals or groups would find in their economic interest,

This position was later disputed by Captain Howard Moore, Director of Naval Petroleum and Oil Shale Resources, at the Senate hearings on Udall's January 1967, leasing proposal.¹⁹

It is obvious from the standpoint of national defense that if the oil shale reserves are to make a significant contribution, there must exist at that time a viable oil shale industry. It is unlikely that sufficient time or resources will be available during a full scale emergency for development of such an industry . . . This is of great importance today because present trends indicate the United States is becoming a crude deficient nation and may in the future be forced to rely more and more upon imported fuels to meet even peacetime demands . . .

The following dialog subsequently took place between Captain Moore and Senator Allott, a member of the Committee:

Senator Allott: I assume it is your point of view—it has been mine for a long time—that development of a viable oil shale industry is a necessity for the national defense and the national welfare.

Captain Moore: It certainly is, Senator.

Senator Allott: And I assume also . . . that the time is now, because . . . such processes . . . are going to require a long leadtime and the investment of vast amounts of money.

Captain Moore: Yes, sir.

Thus, although the Department of Defense favored rapid development, Galbraith and other economic and policy advisors continued to press for a more leisurely approach, in the belief that oil shale could not be a feasible resource either in peacetime or in time of war.

There was further discouragement early in 1968, when DOI published *United States Petroleum Through 1980*, a report that predicted future fuel requirements and forecast the roles of domestic and imported oil in meeting those needs. The report predicted that in 1980 the United States would consume ap-

proximately 6.5 billion barrels (bbl) of petroleum liquids, with domestic oil production supplying about 64 percent and domestic natural gas liquids and condensates an additional 16 percent. Only about 20 percent would be obtained from foreign sources.²⁰

The report was a study in contrasts. It optimistically projected U.S. petroleum production but documented the declining discoveries of new reserves. These discoveries peaked between 1950 and 1957 and afterwards declined steadily to less than 3 billion bbl per year in 1965. However, the report assumed that domestic oil industry could contribute over 4 billion bbl per year in 1980. This seeming inconsistency was rationalized by the assumption that additional discoveries could be encouraged or even forced by the Government's import limitations, tax structures, R&D expenditures, and leasing policies: industry would find more oil if Government made such discovery essential or economically attractive.

The report's most significant conclusion about synthetic fuels was that they would not be needed before 1980 and not even then unless the 20-percent reliance on oil imports became a subject of national concern. According to the report, synthetic fuels such as shale oil would not be developed in the 1960's and 1970's because the processing technology was unpredictable, primitive, and expensive. Private capital would not be invested, it concluded, because profitability and capital recovery would always be threatened by cheap oil imports.

The same conclusions were stated by Walter Hibbard, Jr., of the U.S. Bureau of Mines (USBM), in testimony before the Senate Subcommittee on Minerals, Materials, and Fuels in March of 1968. He cited a USBM study of the potential need for shale oil and the opportunities and constraints on its development. The study concluded that :21

Although the vast domestic resources of oil shale contain the equivalent of 70 times the present domestic proved reserves of crude petroleum, commercial development is

complicated by technologic gaps and economic and environmental problems. Reduction in production costs is prerequisite to the emergence of a significant commercial shale oil industry,

The study also concluded that, unless problems could be solved in the near future, significant production would probably not occur before 1980.

These reports forecast a bleak future for the industry. First, DOI assumed that synthetic fuels would not be needed before 1980 because new oil would be found before serious supply problems occurred. Second, through its control mechanisms, the Government would continue to suppress the price of conventional petroleum to below the cost of producing synthetic fuels. Third, oil shale processes were regarded as technologically and economically unsatisfactory.

The oil industry therefore minimized oil shale activities and instead sought new petroleum reserves. Attractive but expensive exploration opportunities were pursued in Alaska, in the Santa Barbara Channel, and on the Continental Shelf. Little excess capital was available for ventures like oil shale development which offered little promise of substantial short-term gains and which would be influenced by a Federal agency whose commitment to their success was unclear.

The decision to seek new oilfields rather than to develop oil shale was favored by Federal tax policies. Crude oil producers were allowed to write off certain exploration and de-

velopment expenses, which often amounted to over 75 percent of total drilling costs. In essence, most costs associated with conventional oil discovery were tax deductible—an advantage not to be enjoyed by oil shale developers who would be forced to invest after-tax profits and then amortize the large front-end expenses over a period of many years. Crude oil producers also enjoyed a depletion allowance of 27.5 percent of the value of the oil at the wellhead. The depletion allowance for oil shale was set at 15 percent of the value of mined and crushed shale prior to oil recovery. Because raw oil shale has very little value, the depletion allowance was worth only about \$0.05/bbl of shale oil after taxes. If shale oil were given the same depletion allowance as conventional crude oil (27.5 percent of oil value), the credit would be worth about \$0.40/bbl. Therefore, oil shale proponents complained, taxation policies favored conventional crude oil over shale oil by a factor of eight.

In summary, at the time that Secretary Udall was preparing his leasing proposal, industry was not convinced of DOI'S commitment to oil shale development because the Department appeared dedicated to conventional petroleum for at least another decade. The high costs of seeking new oil left little surplus capital for oil shale, which was fiscally unattractive under Government taxation policies. In view of these circumstances, it is probable that industry would have responded negatively to any Federal oil shale leasing proposal, and especially to the uniquely structured proposals that were presented in 1967 and 1968.

An Initial Leasing Program

In November 1963, Secretary Udall called for public comments on the formulation of new oil shale leasing procedures.²² Over 200 responses were received. Assistant Secretary of the Interior John Kelly summarized these comments at the First Symposium on Oil Shale in 1964.²³ According to Kelly, a majority of the comments recommended that Hoover's

withdrawal order be rescinded immediately and that leases be issued for private development on a first-come, first-served basis. DOI was not prepared to accept this recommendation because, in Kelly's words:

The simple rescinding of Executive Order No. 5327 would create more problems than it would solve and would not be in consonance

with the many changes and amendments made by the Congress in the Mineral Leasing Act of 1920, and with the regulations promulgated by the Secretaries of the Interior under these laws.

Kelly also felt that the comments received did not touch on two crucial policy areas: the role of shale oil in the Nation's total energy complex and its effects on developing economies in the rest of the world.

Udall then appointed an Oil Shale Advisory Board to analyze the commercial potential of the Nation's oil shale deposits and to recommend specific plans for implementing their development by private interests or Government agencies. Its members were:

- Joseph L. Fisher, president of Resources for the Future, Inc. (Chairman of the Advisory Board);
- Orlo E. Childs, president of the Colorado School of Mines;
- Benjamin V. Cohen, attorney from Washington, D. C.;
- John Kenneth Galbraith, professor at Harvard University;
- James M. Gavin, chairman of the board of Arthur D. Little, Inc.;
- Milo Perkins, economics consultant from Tucson; and
- H. Byron Mock, attorney from Salt Lake City,

Their four meetings, between July 1964 and January 1965, included a field trip to the oil shale region, presentations by Federal officials, and testimony from representatives of industry, the Colorado State government, trade associations, and other interested groups. The Board's Interim Report was submitted in February 1965.²⁴ (There was no final report,)

The 12-page report was accompanied by six minority opinions, one from each member except Gavin, who had attended only the first meeting and resigned before the report was prepared. One analyst has likened the interim report to "six dissents saying nothing."²⁵ Udall's appraisal was conveyed in subse-

quent testimony before the Senate Interior Committee:²⁶

Although there were divisions of opinion, I felt the report was extremely useful. And I still feel that way, because I think, like a great searchlight, it illuminated the whole landscape. It illuminated all of the policy alternatives . . . I personally feel most strongly that the Oil Shale Advisory Board and every member on it made a very big contribution in focusing on this (leasing policy) as the controversial question. As a consequence, I think the whole problem is illuminated and we at least know what some of the alternatives are,

According to Chairman Fisher's transmittal letter, the members concurred in the following general concerns:

All members agree that the public interest should be safeguarded, however and whenever the resource might pass into a commercial development phase. The public interest includes careful attention to the conservation . . . of community, recreational, and scenic values, as well as the wise use of mineral resources. It also includes protection against speculation in public land leases . . . The Board agrees that the Federal government, working in appropriate cooperation with the States, should move positively but cautiously to encourage private oil shale development, with full protection of the public interest in the broadest sense, and that it must expect to provide some of the support, directly or indirectly, of the research required.

The following specific policy objectives were suggested:

1. to encourage advancement of the technology of shale oil extraction and the development of a competitive shale oil industry;
2. to encourage wide industry competition and initiative in the development of techniques of mining and recovery;
3. to establish conservation goals and standards for the recovery of the oil shale resource, for the protection of other values in and adjacent to oil shale

- lands, and for protection of public health and related values;
4. to prevent speculative use of leased Federal lands to the detriment of oil shale development;
 5. to provide for reasonable revenues to the Federal and State governments from the use of Federal shale lands; and
 6. to set up whatever Federal program may be decided upon in such a way that it can be administered effectively,

The Board effectively returned full responsibility for policy development and program design to DOI but did provide several alternate policy recommendations. The following three options were suggested for consideration:

1. continue Hoover's withdrawal order and initiate Government research (including contracts with private firms) to develop conservation standards and practices and to determine a market value for shale oil, then use this value as the basis for subsequent leasing regulations; or
2. rescind the withdrawal order and offer a few commercial-size tracts for competitive leasing by private industry with mandatory due-diligence and performance requirements to prevent speculations; or
3. modify the withdrawal order but restrict initial leasing to a few small research-size tracts with the option for commercial leases contingent upon commercial viability of the recovery processes to be developed.

Option 1 was endorsed by Galbraith and echoed the opinions of some economists and Government officials who feared that any commercial leases would be purchased for speculative purposes. In their opinion, the Federal lands thus accessed would not be used to develop an industry but rather would be hoarded for the time when conventional petroleum reserves were exhausted. By this technique, they feared, the oil companies would prevent others from establishing an industry in competition with conventional petroleum. Without a competing domestic supply system, the companies could press for

continuation of favorable policies such as quotas on imported oil and high depletion allowances for domestic crude producers. Concern over speculation was coupled with a suspicion that shale oil could ultimately prove to be much cheaper than conventional crude oil.

One of Galbraith's major concerns was that, without firm economic data, the Government would have to rely on industry estimates of the true cost of shale oil extraction. Immediate leasing of large tracts was considered undesirable until this true cost could be better defined. If shale oil were actually cheap, release of Government reserves would constitute a massive giveaway to the oil companies. If oil shale economics were marginal, the companies would buy up the leases to prevent others from entering the energy field. If costs were too high, leasing would be of no value because no shale oil would be produced for many years, if at all.

In summary, Galbraith's position was that private lands were adequate for initial field-testing of oil shale technologies and that no Federal lands should be released until the value of the resource was established through Government research. His position was summarized in his minority opinion:

Having withstood thoughtfully designed raids in the past, it is important that the government show equal wisdom and restraint in the present on behalf of our resources for the future . . . The major oil companies are naturally concerned with protecting their position in the event of the development of an oil shale industry by buying or controlling oil shale acreage. However, with one or two exceptions they seemed not now inclined to incur substantial development costs to produce shale oil. Certainly for companies with alternative sources of petroleum the economic attraction of oil shale is not high. The incentive to control oil-bearing acreage is thus, for the time being, much greater than the incentive to produce from it,

Cohen concurred with most of Galbraith's principles but also favored Option 3 (research leasing), provided that the private re-

search was closely scrutinized by the Government to ensure that the lessees were not simply hoarding resources. Fisher agreed that private lands were adequate for R&D, but he supported leasing of research tracts and favored accelerated Government research (including private contracts) in case industry did not respond to the lease offering. He also recommended that the Government announce its intention to offer commercial leases upon completion of the research phase. He suggested that commercial leases be restricted to companies that either participated in the research-tract program or conducted equivalent research on private lands.

Childs, Perkins, and Mock favored Option 2—immediate offering of a limited number of commercial leases. Childs warned that research leases would not interest industry unless they were the first stage in a commercial leasing program. Mock recommended that the lease terms be attractive to industry, particularly with respect to tract size, and suggested that each tract be 5,120 acres, the maximum allowed by the Mineral Leasing Act of 1920. He also recommended that industry participate in tract nomination and suggested an adjustable royalty so that both industry and Government could receive fair returns. Perkins saw no need for the Government to become involved in process-related R&D and recommended that such activities be left to industry. He suggested Government research in the areas of health and conservation standards, water use, environmental considerations, and geological exploration,

Thus, in early 1965, Secretary Udall found himself in a rather difficult position. The suggestions of potential developers and the general public conflicted with some of DOI's fundamental policies and did not address national and international energy needs and supply strategies. Udall had then attempted to elicit expert guidance from the members of the Oil Shale Advisory Board, who agreed on general goals but disagreed on appropriate policies. Some members maintained that research was mandatory to prevent speculation and to avoid a massive giveaway. Others held that

research leasing alone, without a commitment to subsequent commercial leasing, would fail. In any event, research alone would not convey the economic benefits that were desired by oil shale proponents in Congress. Finally, there was no assurance that industry would respond favorably to any program because the severity of the energy-supply problem was not universally acknowledged, and shale oil was unfavorably regarded compared with domestic petroleum and with the then reliable oil supplies from Middle East fields.

Udall's predicament was complicated by the fact that some Senators and Representatives strongly opposed providing the oil industry with access to the public's oil shale resources, while others wanted Congress to consider new legislation to force a leasing program. If enacted, such legislation would have preempted DOI'S control of the oil shale lands and could have run counter to DOI'S policies.

The situation was further complicated in 1966 by a rush to file new mining claims on the Federal oil shale lands, precipitated by the discovery of dawsonite. Dawsonite is a potential source of aluminum—a locatable mineral under the Mining Law of 1872—and the private claimants believed that location of dawsonite claims could eventually lead to acquisition of the Federal lands that contained the mineral. Dealing with these efforts occupied much staff time within DOI during 1966 and probably delayed the formulation of leasing policies.

The next milestone in policy development was reached on January 27, 1967, nearly 2 years after the Oil Shale Advisory Board submitted its report. On that date, Secretary Udall announced a comprehensive five-point program that reflected most of the concerns and suggestions of the Board members. " Its principal objectives were:

1. to clear titles of oil shale lands and to resolve ownership disputes that were inhibiting private investment in oil shale development;

2. to allow consolidation of scattered private holdings through land exchange, thus creating more private sites suitable for large-scale development;
3. to investigate nuclear in situ oil shale processing;
4. to conduct a 10-year federally funded research program to establish oil shale's economic potential and shale oil's market value; and
5. to sell provisional development leases that would allow limited private access to Federal oil shale lands.

Although details were not provided in the announcement, all objectives appeared at least mildly favorable to industrial cooperation.

The proposed program addressed many issues influencing development. The first objective would have clarified the ownership of disputed Federal lands and would have simplified any subsequent leasing program. The second would have permitted private landowners to consolidate their lands and to pursue development from a more favorable posture. If this had been accomplished, leasing of public lands might not have been so important. Nuclear processing, the focus of the third objective, appeared promising at the time and further study could have benefited industry. The research program (point 4) was primarily to determine fair values for oil shale products so that the Government could ensure an equitable return from subsequent leasing. Industry, too, certainly would have benefited from technical, economic, and resource-appraisal R&D,

With regard to point 5, the announcement stated that only provisional leases would be offered, and commercial leases would not be sold until R&D had been successfully performed on the research tracts. Udall did not describe the lease terms, but the term "provisional" was disturbing to industry in view of Orlo Childs' contention that restricted research leases would not attract industry. Industry's pessimism was not eased by the general tone of Secretary Udall's presentation, which included the following statement:

The public interest requires that in our efforts to develop the technology of extracting oil from shale, we write into every rule, regulation, contract, and permit affecting the public lands those terms and conditions that will: encourage competition in development and use of oil shale and related mineral resources; prevent speculation and windfall profits; promote mining operation and production practices that are consistent with good conservation management of overall resources in the region, encourage fullest use of all known mineral resources; provide reasonable revenues to the Federal and State Governments.

This cautious position was further emphasized by the specific lease terms, which were published on May 10, 1967.²⁸

The leasing proposal called for allocating 30,000 acres of Federal land to R&D. This area would be divided into several individual tracts, with the size of each tract dependent on the quantity and quality of the contained oil shale resources. Lessees were to be selected by the Secretary on the basis of proposals and according to demonstrated need for access to Federal land. Competitive bidding was not to be used. Tracts could be as large as 5,120 acres. However, for the first 10 years, the developers would be restricted to relatively small areas where small-scale research was to be conducted. Diligent R&D was mandatory, and unless the lessees sustained some level of progress, the leases could be revoked. This requirement assured that leases would not be purchased for resource-holding purposes nor to prevent other potential developers from gaining a lead in process development.

To assure diligence, and to enable DOI to obtain a true picture of the costs of oil shale development, DOI required that the lessees disclose all technical data acquired. Patent rights for all technologies developed on the research tract would revert to the Government. The disclosure requirement, coupled with the patent provision, effectively removed a major incentive by eliminating any possibility that technical advantages might

accrue to the lessees as a result of their research expenditures,

After the 10-year research phase, if DOI and the lessees were so inclined, and if DOI believed that commercial viability had been demonstrated, the research leases could be extended to cover commercial development. No royalties would be paid to the Government for shale oil produced until the commercial leases were executed. However, the Secretary reserved the right to approve extensions and to determine how much of each lease tract would be opened for commercial activities. He also reserved the right to mandate the royalties for the commercial phase. A minimum royalty of 3 percent of the gross value of mineral products was suggested. If the commercial venture proved profitable, the Government would share in the profits through a variable royalty, which would range from 10 percent of net income in excess of 10 percent of capital investment, to 50 percent of net income in excess of 20 percent of capital investment.

These terms reveal the influence of the Oil Shale Advisory Board, Chairman Fisher's recommendation of research leasing is evident, as are his suggestions for Government R&D and for subsequent commercial leases restricted to those companies that purchased research leases. Cohen's concern over due diligence was adequately addressed, as was Mock's recommendation of a variable royalty, with the size of the royalty left to the discretion of the Secretary. Childs and Perkins recommended commercial leases; these might be allowed but not for at least 10 years after the research leases were sold. Galbraith's concern over the unknown but probably enormous profit potential of oil shale is evident throughout.

The January announcement of the program's framework and the May publication of tentative leasing regulations were both part of Secretary Udall's efforts to evolve an oil shale program that would be acceptable to oil shale opponents and proponents alike. He sought comments on the general framework and used them (in part) to structure the ten-

tative regulations. The Senate Committee on Interior and Insular Affairs provided a forum for receiving comments, for assessing Udall's response, and for providing congressional guidance. The committee conducted two hearings on the program that emerged in 1967. The first, in February, received comments on the program announcement. Joseph Fisher, former chairman of the Oil Shale Advisory Board, acknowledged that the five-point program was largely based on his recommendations. He re-emphasized the need for research to address the unknown value of oil shale and the possible effects of its extraction.²⁹ Colorado's Governor Love recommended rapid action on the oil shale question.¹⁹ The Director of Naval Petroleum and Oil Shale Resources expressed the Navy's interest in oil shale development as a means of providing fuel for national defense.³¹ The American Federation of Labor and the National Farmers Union testified regarding distribution of any Federal royalties that might accrue from oil shale leasing.² Sinclair Oil warned that oil companies would not invest in research unless assured of eventual commercial operations. And Western-State congressional delegates and the Governors of Utah and Wyoming expressed their continued interest.³⁴

Many of the witnesses and committee members conveyed their appreciation of DOI's progress. However, little was heard from the major oil companies that were most likely to respond to any leasing proposal. Some industry officials expressed concern over the research focus of the leasing proposal, and advice was offered for improving its terms.

The second set of hearings was conducted in September—after the tentative leasing regulations were published. It was during these hearings that Utah's Senator Bennett expressed his concern about Government interference with private enterprise, that Colorado's Senator Dominick spoke regarding the "onerous responsibility and far too much discretion" given the Secretary, and that Senator Proxmire called for "a halt to the present hasty administrative effort."

Industry's reaction to the leasing regulations was almost universally unfavorable. In his testimony, Secretary Udall summarized the 36 specific comments submitted to his office. According to DOI's analysis, major concerns were expressed in 10 specific areas: the size of the royalties, the term of the leases, the acreage to be allowed for research and commercial activities, the non-competitive selection process, the relationship of leases to operations for recovering associated minerals, the disclosure requirements, the discretionary authority given to the Secretary, the restrictive provisions for land exchanges, and miscellaneous provisions for conflicts with unpatented mining claims and automatic termination in the event that commercial operations ceased for any reason.

The position of most of the oil company respondents were summarized by an official of Continental Oil Co.:³⁵

Our reaction is not a favorable one. Overall it is our view that the rights to be granted are circumscribed with restrictions and conditions to such an extent that sufficient economic incentive will be lacking. It is our view that private industry will not be warranted in making the necessary capital, organizational, and technological commitments which will be required.

These sentiments were echoed by an official of Sun Oil Co.:³⁶

The proposed requirement on the disclosure of research information . . . would make it impossible for a company to develop technology processes or engineering design in for-

mation without giving that information to all other companies. This provision completely removes the incentive for carrying out a proprietary research program and is in direct conflict with the free enterprise system,

The president of Union Oil Co. analyzed the profit-share royalty provisions of the regulation:³⁷

Under this provision a successful operator will find himself in a bracket paying 50 percent of his pretax profits without allowance for royalty and depletion plus at least a corporate income tax of 48 percent of his pretax profits remaining after allowance for royalty and depletion. It is submitted that these rates are excessive and unrealistic; and may I add that it is well known that the Arabs are tough traders. But may I suggest Mr. Udall's suggested devices would receive the plaudits of Karl Marx if he were alive today, and no doubt, John Kenneth Galbraith, who is alive today,

In summary, industrial officials stressed financial uncertainties and warned that the elimination of proprietary rights to technical information would prevent companies from committing venture capital. Even if research were diligently pursued and feasible processes were developed, subsequent commercial operations could not be assured of acceptable profits because the Secretary could impose extremely high royalties. In any case, the phased leasing approach (uneconomical research leases, followed perhaps by commercial leases of unknown quality) would necessitate large front-end capital commitments without guarantee of adequate returns.

A Revised Proposal and Its Demise

Secretary Udall described his next course of action as follows:³⁸

We are carefully studying these comments to test out our assumptions and to improve our approach . . . Aided by these comments . . . we already have underway the further intensive study of oil shale policy which is so necessary in arriving at the decisions on a

proper program. Our target date for completion of this study is mid-January 1968.

The study group consisted of DOI personnel and experts from the Bureau of the Budget and the Council of Economic Advisors. The mid-January milestone passed, and on February 7, Secretary Udall stated that the group

had not yet provided definite recommendations to either modify the proposed regulations or to re-issue them in unmodified form.³⁹ The group's report, *Prospects for Oil Shale Development—Colorado, Utah, and Wyoming*, was finally released on May 29, 1968.⁴⁰ It recommended that DOI test the "market potential" of oil shale by leasing two different types of deposits (one thin but outcropping, and one thick and buried), each sufficient to supply a 35,000- to 50,000-bbl/d plant for 20 to 30 years. It was recommended that the test leases be offered before the end of 1968 and that they be followed by production leasing within 5 years. The test leases were not fully described but their general framework departed significantly from Udall's May proposal for research leasing.

During the next few months, DOI expedited creation of a new leasing proposal that could be released before the presidential election in November 1968. Secretary Udall first requested comments on the general concept of test leasing as outlined in the DOI study report. About 26 responses were contributed before the closing date of August 31.⁴¹ In general, industry's responses were quite favorable and commended the Secretary on his abandonment of the research leasing regulations. The major consistent objection was to the proposed sizes of the lease tracts, which industry representatives claimed were too small for economic operations. Few comments were received from private individuals. The Colorado newspaper editor Freeman, who had presented scathing testimony at the 1967 hearings, furnished the following comments:

I request that you stop certain undesirable features of the . . . program . . . which point to fraud in the Interior Department operations, if not fraud in the Justice Department and in Congress as well . . . The report, in my judgment, evidences a great desire on the part of the Department and its officials to conceal the oil shale . . . scandals which dwarf the Teapot Dome affair by at least a hundred times.

Senator Proxmire characterized the report as a "significant step" but re-emphasized his desire for research to help the Government determine a fair value for its oil shale resources. He also questioned the need for leasing, given the extent of the private holdings.

On September 10, DOI designated and described three test-lease sites and set forth rules by which interested companies could drill exploratory coreholes on the sites. Each tract was sized to supply a 125, 000-bbl/d facility. This size was larger than recommended by the DOI study group and apparently reflected industry's desire for adequate resources. The initial deadline for exploratory drilling was November 15, but it was subsequently extended to December 12. The Oil Shale Corporation (Tosco) and Atlantic Richfield drilled coreholes on two of the proposed tracts. Shell Oil Company drilled on one of the same tracts. No exploration was conducted on the third tract.

On September 27, DOI published a first draft of the proposed lease form, which was modified on October 2 and October 14. On November 1, interested firms, were sent legal descriptions of the tracts and were invited to submit sealed bonus bids for their leases. Bids were to be submitted by December 20, after the November presidential election.

The final version of the lease form was published on November 5. Its provisions were much less restrictive than those of the May proposal. Industry was allowed to retain patents and technical information acquired on the tracts. However, the Secretary was to be provided with all of the information acquired during tract development, and licensing of any new technology not related to refining was required. Royalties for in situ operations were fixed at 12.5 percent of the value of shale oil produced. The royalty for above-ground retorting was to be calculated on a sliding scale, with a royalty of \$0.14/ton of shale mined imposed for shale yielding 30 gallons of oil per ton (gal/ton). (These royalties

were roughly equivalent to those for oil and gas.) In addition, minimum royalties of from \$10 to \$50/acre were to be collected after the eighth anniversary of the lease. Minimum royalties on the largest tract would have amounted to over \$100,000/year and should have acted to discourage speculation, at least by small investors if not by major oil companies. As with the earlier proposal, development was to be phased. However, the types of activities to be conducted during the R&D phase were not restricted, and lessees were assured that commercial development would be permitted.

Cameron and Jones, Inc., a firm with extensive experience in the field of synthetic fuels, supplied the following analysis of the lease offering:¹²

We believe that the . . . program is a major and significant step towards the development of an oil shale industry. Several provisions of the test lease form, however, and the timing of the entire programs coupled with what we believe to be less than prime oil

shale lease sites, result in our conclusion that the program will not achieve the objectives for which it was designed. Seldom have we felt so strongly compelled to interject recommendations for industry action within the pages of this report. In this instance there appears to be a very real possibility that if the test leasing program is not successful, industry's reason for nonparticipation may be misunderstood. Already the word "apathy" has been used by news media to describe industry interests. For this reason we strongly recommend that each company not intending to participate . . . state their reasons in writing to the Secretary of the Interior.

DOI expected to receive several bids of \$20 million to \$30 million for each tract. In fact, only three bids were submitted. One bid (\$625,000) was provided by a drilling operator. The other two were submitted by Tosco: \$249,000 (for a lease valued by DOI at \$30 million) and \$250,000 (for a lease for which DOI expected to receive \$20 million). The bids were rejected, and the program was canceled.

Reasons for Failure of the 1968 Program

The 1968 leasing attempt failed because:

- the energy-supply situation and the economic environment were not conducive to investment in synthetic fuels;
- DOI did not appear committed to oil shale development;
- taxation policies favored conventional petroleum over oil from shale;
- according to industry, two of the lease tracts were too small (1,251 acres) to permit long-term commercial development;
- industry was not involved in lease-tract nomination, all feasibility studies were conducted within DOI; and
- only 3 months were allowed for potential lessees to evaluate resource areas covering several square miles.

The final point was crucial, because some of industry's attempts to characterize the tracts

provided very discouraging information, which might have been countered if time had permitted detailed exploration. For example, Tosco detected extensive ground water aquifers above the mining zone on one tract, and found geological defects that might have precluded mine development. One of Tosco's bids included a \$20 million delayed bonus-bid provision that would have been executed if subsequent exploration refuted the initial findings. DOI declined the offer.

In summary, Secretary Udall was diligent in his attempts to develop an acceptable oil shale program. He was subjected to political and public pressures both for and against private oil shale development. He attempted to formulate a leasing program that would relieve both types of pressure, but his early proposals produced strong negative reactions from private firms. His ultimate lease offer-

ing, although deficient in some areas, might have attracted positive industry response if the business climate had been different. The

offering was certainly affected by its hasty promulgation between May of 1968 and the presidential election in November.

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