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PROTECTING THE PUBLIC INTEREST IN OIL SHALE DEVELOPMENT*

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In the nineteenth century we subdued the continent and increased our wealth and well-being in large part because of the vast and abundant supply of natural resources which lay before us.¹ Today these natural resources have been in many cases almost exhausted. There does remain, however, one vast, untapped natural resource: the great oil shale deposits of Colorado, Wyoming, and Utah, together with the sodium minerals and aluminum ores to be found associated with the oil shale deposits in the region.² With the discovery of the associated sodium minerals and aluminum ores, it has been estimated that the value of the deposits has perhaps *tripled*, making their entire value *in excess of 6 trillion dollars*.³ In addition, the rapidly rising costs of exploration and development of crude petroleum will continue to increase the already enormous value of the Western shale oil deposits.

The tremendous economic value of the resource, alone, dictates that its development be handled in a manner beyond reproach, and its public ownership prescribes that its development be for the benefit of all the American people. However, there are many aspects of the present situation which cause me great concern and lead me to fear that the resource will be developed in a monopolistic manner and contrary to the best interests of the American people. Consider, for example, one of the statements made by Secretary of the Interior Udall, primarily at the time of his announcement of an Oil Shale Development Policy on January 27, 1967.

At that time, Secretary Udall said, "The public lands in the region representing the largest untapped source of hydrocarbon energy known to the world belong to all of the people and must be used for

* This article is derived from a statement by the author to the Senate Subcommittee on Antitrust and Monopoly on April 18, 1967. The statement was originally published without the postscript in the *Colorado Quarterly*. The postscript notes certain occurrences in the year following the statement and the author's views concerning these occurrences.

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1. For informative historical studies regarding the disposition of the public domain, see R. Robbins, *Our Landed Heritage* (1942), and V. Carstensen, *The Public Lands* (1963).

2. The minerals are dawsonite, a sodium aluminum carbonate and potential ore of aluminum, and nahcolite, a sodium carbonate. See Brown, *The "Associated Minerals" Dilemma and the New Federal Oil Shale Policy*, 39 U. Colo. L. Rev. 370 (1967), and Smith & Milton, *Dawsonite in the Green River Formation of Colorado*, 61 *Econ. Geology* 1029, 1035 (1966).

3. *Denver Post*, Apr. 7, 1967, at 4.

the benefit of all the people." Surely we all agree with this in principle. When one looks at the historical and philosophical substance of the statement, however, and at the ways in which it frequently has been ignored in the United States, it is tragically apparent that agreement has too often been limited to principle and not to application.

This statement derives from the Natural Heritage Doctrine, a doctrine which stretches back into early modern times and perhaps had its origin in ancient Roman law.

According to this doctrine, the land, the forests, the streams, the minerals and all the natural wealth of the country belong to the people. In 1909, Mr. J. A. Holmes, the Secretary of the Minerals Section of President Theodore Roosevelt's National Conservation Commission, eloquently articulated the doctrine when he wrote in a report for the Commission:

The resources which have required ages for their accumulation, to the intrinsic value or quantity of which human agency has not contributed, which when exhausted are not reproduced, and for which there are no known substitutes, must serve as a basis for the future no less than for the present welfare of the nation. In the highest sense, therefore, they should be regarded as property held in trust for the use of the race rather than for a single generation, and for the use of the nation rather than for the benefit of the few individuals who may hold them by right of discovery, or by purchase. . . . The right of the present generation to use efficiently of these resources what it actually needs carries with it a sacred obligation not to waste this precious *heritage*.⁴

This belief is a part of the democratic revolt against feudalism, when the land and resources belonged to the lord of the manor or to the king and the people were able to use the land only at the sufferance of the lord. In the democratic revolt, the people became sovereign and all of the resources reverted to them. Indeed, "[t]he Constitution has vested the people as a whole with ownership; both state and federal governments act as trustees for the people" on the public domain.⁵ However, this is an abstraction and it can be implemented only in two ways. First, the government can hold the land or resources in the public domain as an agent of the people and, de-

4. 1 National Conservation Commission, Report 110 (1909).

5. S. Ciriacy-Wantrup, *Resource Conservation*, at 145 (1952). See also A. Gustafson, C. Guise, W. Hamilton, Jr., H. Reis, *Conservation in the United States* 10 (2d ed. 1945).

giving its just powers from the consent of the governed, can manage and operate the land—but only for the benefit of the people.

Second, and, of course, in the long run more important, the people can exercise use of the land and its resources through private individual initiative based upon the institution of private property. Consequently, in the new democracy of America, where lands and minerals were abundant and the people few in number, it became customary to allow the individual a right to appropriate a farm or mine and to claim it as his private property.⁶ Strangely enough, this ancient doctrine did not receive legal sanction in the United States until 1866 as far as minerals were concerned. Before that time prospectors on federal lands were technically trespassers.⁷ However, with the mineral acts of 1866, 1870, and 1872, the rights of entry, location, and purchase were established. These acts along with many others, and, of course, the Homestead Act, the Desert Lands Act, and similar legislation promoting the appropriation of land for agricultural and forest purposes, made possible the rapid development of the American West.

There are, however, important corollaries and restrictions on the principle of private property in relation to the Natural Heritage Doctrine. These restrictions arise out of the basic concept of the natural heritage—that the land belongs to all of the people. A major limitation on private property which is imposed by the Natural Heritage Doctrine is one which has historically received great attention in the United States. This is the requirement of stewardship. Although the individual may own the land or forest or stream or mine, his life is finite and his interests transitory. The rights and interest of the people by contrast are perpetual, stretching from generation to generation. Hence, the Natural Heritage Doctrine places a strong emphasis upon conservation. President Theodore Roosevelt once stated:

The function of our government is to insure to all its citizens, now and hereafter, their rights to life, liberty, and the pursuit of happiness. If we of this generation destroy the resources from which our children would otherwise derive their livelihood, we reduce the capacity of our land to support a population, and so either degrade the standard of living or deprive the coming generations of their right to life in this continent.⁸

It is quite true, as Professor Zimmerman states, that “[t]he con-

6. E.g., the Homestead Act of 1862, ch. 75, 12 Stat. 392.

7. Bloomenthal, *Multiple Mineral Development on the Public Domain*, 9 Wyoming L.J. 139 (1955).

8. Message to the National Conservation Commission, 1909.

servation movement stemmed from a bitter conflict between private business enterprise which sought to profit from wasteful exploitation of natural wealth, 'the heritage of the people,' on the one hand, and the federal government, representing the long-run interest of the nation, on the other."⁹ Conservation was a reaction to a situation described eloquently by John Bates Clark: "In . . . many instances, the individual wins a profit by what inflicts upon the public a melancholy waste. . . . Exploitation usually makes the individual richer and the people poorer, and it nearly always gives the individual far less than it takes from the public."¹⁰

Ultimately, however, the conservation movement received statutory and constitutional sanction as an invaluable limitation upon unbridled private property rights. American jurisprudence accepts the rule that "the public at large [has] an interest in the preservation of the natural resources of the country sufficient to justify appropriate legislation to prevent exploitation or waste of such resources by the owners of the land on which they are found."¹¹ The United States Supreme Court has affirmed a decision of the Supreme Court of the State of Washington which stated that "private enterprise must use its property in ways that are not inconsistent with public welfare."¹² The land must not be abused, but must be passed on to the next generation in usable form. And in the case of exhaustible resources the private owner must pay a special tax for the privilege of using up the resources, the proceeds of the tax to be used for social ends such as education.¹³

The second limitation on private property which arises from the Natural Heritage Doctrine is more important for our purposes today. Under a competitive system various private owners compete with each other to sell the fruits of the land to all who will buy, thus providing equal enjoyment for all the people of the natural resources of their country at fair and reasonable prices. The Natural Heritage Doctrine expressly depends upon the regulating power of competition as a means for distributing the benefits of natural resources and expressly excludes the exploitation of a natural resource for the benefit of a private individual or corporation to the detri-

9. E. Zimmerman, *Conservation in the Production of Petroleum*, 28 (1957).

10. Clark, *The Economics of Waste and Conservation*, 106 *Atlantic Monthly* 325, 326 (1910).

11. 11 *Am. Jur.* 1034.

12. *State v. Dexter*, 32 *Wash. 2d* 551, 202 *P.2d* 906, 907, (1949), *aff'd mem.*, 338 *U.S.* 863 (1949).

13. *See, e.g.*, the Minnesota severance tax on iron ore. Oil shale revenues for education were of concern to the Oil Shale Advisory Board established by Secretary Udall. *See Barry, A National Policy for Oil Shale: Factors to be Considered*, Colorado School of Mines Second Symposium on Oil Shale 104 (1965).

ment of the people. Monopoly practices and monopoly profits are incompatible with the Natural Heritage Doctrine and with the statutes regulating the public domain.¹⁴ The small acreage limitations in all of the land legislation and the very purposes for which the legislation was enacted clearly indicate that the prospect of land monopoly was abhorrent to Congress.¹⁵ And yet the worst fears of the Congress were realized. William Sparks, in his first report as Land Commissioner in 1885, stated that "The public domain [had been] made the prey of unscrupulous speculation and the worst forms of land monopoly . . . committed under the guise of various forms of land entry."

Thus, the Natural Heritage Doctrine was an article of faith for the conservationists, but it has also formed a part of the thinking of economists. Economics today, however, is so highly technical and quantitative that most economists are too busy with their tools of decision-making and management to think or write much about the basic philosophy which underlies the discipline. Therefore, I shall appeal at first not to a modern economist but to one of the great American economists of the past generation, Henry Carter Adams (1851-1921), for many years a Professor of Economics at the University of Michigan, President of the American Economic Association in 1896, and described by Professor Joseph Dorfmann of Columbia as "the harmonizer of liberty and reform." By this Dorfmann means that Adams, while a believer in *laissez faire* and the efficacy of the competitive market, was troubled by the failures of competition and the growth of monopoly.

He addressed himself specifically to this problem as it relates to minerals in one of his major works, *The Science of Finance*, published in 1898:

The general argument favouring the public ownership of mines is that minerals are the free gift of nature, and should, therefore, not be made the property of any individual. Even in countries where the surface lands are assigned to individuals for private cultivation, it has been proposed to reserve the mineral deposits for the State. This suggestion is found in the land policy proposed by Turgot, the great

14. Noyes, *The Institution of Property* 292. Theodore Roosevelt once stated that: "If we allow great industrial organizations to exercise unregulated control of the means of production and the necessities of life, we deprive the Americans of today and of the future of industrial liberty, a right no less precious and vital than political freedom. We should do all in our power to develop and protect individual liberty, individual initiative, but subject always to the need of preserving and promoting the general good. . . . No man and no set of men should be allowed to play the game of competition with loaded dice." (Address to the National Conservation Commission, 1909.)

15. Settlement and revenue were the prime objectives. See Cong. Globe, 42d Cong., 2d Sess. 534 (1872).

Physiocrat statesman of France. The policy which has come to prevail in the United States, however, and indeed in most countries, is to give title, in case of sale, from the surface to the centre of the earth. The argument which has led to the assignment of mineral lands as private property does not disregard the fact that minerals are a gratuitous gift of nature, but asserts, as breaking the force of this consideration, that nature has been so bounteous in her gifts that no injury can arise to consumers as the result of such assignment. Consider, for example, the wide extent of the coal-fields in the United States, as also the great number of iron-mines and salt-wells that abound. There is nothing in the nature of the case why competition should not determine the price of these products, and, in the absence of artificial restraints, the public finds, in the many opportunities for mining, a guarantee that mineral products of this class can be had at cost. There is, therefore, no more necessity from the ethical or commercial point of view for the government to own and administer such mineral property than for it to take into its possession any other industrial enterprise. . . .

But this line of reasoning does not apply to minerals which are localized to such an extent that they may be accounted a natural monopoly, as for example the zinc mines in the United States. . . . A detailed study of the mining conditions of any country shows many exceptions to the assumptions of the argument for private ownership presented above. . . .

It must not be overlooked that it is an injustice to the community as well as a source of a social danger to assign rich mineral deposits to individuals or to corporations. Mineral wealth is the gratuitous gift of nature, and it would be a mistake for any government to ignore this fact."

These words are alive and relevant today. Indeed, the Natural Heritage Doctrine is alive and relevant as it always will be and always must be.

For example, as recently as January 30, 1967, President Johnson in addressing a message to the Congress on air pollution, referred specifically at the end of his message to the need to protect the natural heritage. In concluding his statement, the President said: "If we are to have that America [an America of clean air and clean streams] we shall have to master the consequences of our own prosperity and the time to begin is now." He might have added that we also have to master the consequences of our scientific and technological advance which opens up for us opportunities and problems in the mastery of natural resources, such as oil shale.

If the American people as a whole are to have the benefits of this great source of energy in western Colorado, Utah, and Wyoming, the resource must be developed without the taint of monopoly. I

shall now argue two propositions. The first is that the oil industry in the United States is so highly monopolized that we cannot trust the development of this resource to that industry. The second is that the only instrumentality which is left is the government; and, therefore, I advocate the development of this resource either by a government authority or by a quasi-government corporation, such as the Communications Satellite Corporation commonly known as ComSat.

First, to prove that the oil industry in the United States is highly monopolized is as unnecessary as to attempt to batter down an open door. The facts in this matter are so well known that it is not necessary to repeat them. The oil industry is a monopoly primarily in the sense that it is able to exercise control over supply and, by restricting supply, to raise the price of petroleum energy to all the people of the United States. Unfortunately, this monopoly is protected and sanctioned by law—both state and federal—so that the oil industry is in the enviable position—and the most anti-social position of all—of a monopoly protected by public instrumentality for private gain.

Professor M. A. Adelman of the Massachusetts Institute of Technology has estimated that the total cost of monopolistic practices in the oil industry to the American people is in the neighborhood of four billion dollars per year. Of this sum about half is due to our import restriction policy and half to our restriction of supply in order to keep prices high.¹⁶

The operation of stripper wells is a glaring example of this latter policy. Stripper wells can be operated only when the price is kept artificially high enough to cover the cost of extraction of only a barrel or two of oil a day from the well. Professor Adelman observes: "In Texas alone it would be worth paying about \$1.3 billion to get rid of this public nuisance, a liability masquerading as an asset; nationally the savings would be over twice as great. . . . The Russians classify a well producing less than twenty barrels daily as 'inactive' and get rid of it as soon as possible; we cherish and fertilize these weeds at the expense of the flowers."

The second form of waste attributable to the oil monopoly derives from the advantages which the oil industry enjoys through depletion allowances in its tax structure. I am informed by an economist formerly with the Bureau of Mines that studies undertaken there show that the tax advantage of the oil industry is somewhere in the magnitude of 25 to 30 percent over the other corporations in the United States. These tax advantages encourage wasteful and uneconomic exploration for oil. Professor Adelman estimates that an end to

16. Adelman, *Efficiency of Resource Use in Crude Petroleum*, 31 Southern Econ. J. 101, 102 (1964).

over-drilling in the United States would bring an annual savings of \$2.1 billions, \$1.3 billions in developing costs and \$800 millions in producing costs. These expenditures are mainly the result of monopoly profits and tax advantages which the petroleum industry enjoys.

It is not only economists who recognize the monopolistic character of the crude petroleum industry, however. In April 1965, Gilbert Burck published an article in *Fortune* magazine entitled, "U.S. Oil: A Giant Caught In Its Own Web." A brief quotation will characterize this outspoken and fully documented indictment.

The chief reason the industry is in a predicament is that the production and pricing of U.S. crude have been walled off from free market forces by a system of government controls whose self-defeating complexity is matched not even in the U.S.S.R., and whose affection for special and parochial interest as distinguished from the national interest is matched not even in the myths of the robber barons. The rigging of crude production by the oil-producing states flourishes in the cause of conservation, competition, and national security, but it has turned out to be an elaborately organized system of government-guided waste that escalates costs and has been not too inaccurately described as a menace to national security.

Even more than most cartels, this cartel fosters neither competition, true conservation, nor national security; and it makes a mockery of national economic efficiency. Real competition by definition exists only when there is a chance that any competitor will get hurt and a certainty that some will; the oil-producing industry commits the classic blunder of confusing the preservation of competition with the preservation of competitors. Because the system results in vastly more wells than necessary, it wastes untold sums in capital and operating expenses.

All of this brings me to my second quotation from Secretary Udall's program announcement: "We must encourage competition in the development and use of oil shale and related mineral resources. . . ." I suggest to the Secretary and to the Congress that without a sweeping revision of import quotas, proration allowances, and tax advantages it will be impossible to achieve competition in the petroleum industry. This being the case there is only one other way to protect the interest of the American people and this is to introduce a new competitive force into the industry in the form of a governmental authority for the operation, exploitation, and development of oil shale and related minerals. Therefore, I advocate either a government corporation, such as TVA, or a quasi-private

corporation, such as the Communications Satellite Corporation, to develop this complex of mineral resources.

The ComSat Corporation, as it is familiarly called, comes closer to joining public and private interests in a single business unit than any other commercial organization ever created. Consisting of representatives of authorized communications carriers, of public shareholders, and Presidential appointees, the ComSat board of directors is a unique body. Its decisions are shaped not by the profit motive alone but also by national policy and, to some extent, international relations. Although the statutes provided that the ComSat Corporation is not "an agency or establishment of the U.S. government," the close cooperation of federal agencies such as NASA and private agencies such as A.T.&T. plus the joint use of private and public capital equipment assure that ComSat will operate differently from the usual private corporation.

Many of the reasons justifying the creation of ComSat can be applied with equal validity to the development of the oil shale and related sodium minerals of the Colorado, Utah, and Wyoming area. These reasons include the vastness of the resources involved and the consequent scope of the effort necessary to develop them, the uncertainty and novelty of the technology, the substantial and distinct public interest, and the necessity for continuing cooperation between government and industry in the development of the resources.

First, this nation possesses within the Piceance Creek basin area the richest deposit of mineral resources on earth. The potential oil resources themselves exceed known domestic and foreign liquid petroleum reserves several times over. Yet, difficult as it is to comprehend, discoveries within the past year of extensive sodium mineral deposits, valuable both for alumina and soda ash, have approximately trebled the total value of these mineral lands and deposits. Alumina is a source of aluminum; the United States presently imports about 78 percent of its aluminum resources in the form of bauxite ore. Soda ash, obtainable from the mineral nahcolite, is a valuable substance used in both the steel and glass industries. Dawsonite, the source of alumina, is widely disseminated throughout the oil shale in microcrystalline form. Nahcolite occurs in beds, pods, or lenses, primarily, according to initial information, within the center of the Piceance basin. The basin, containing this multiple mineral complex, covers some 2,400 square miles.

These facts alone dictate that such extensive mineral deposits can be developed most economically by a single, massive operation. No one company could or should attempt to undertake such an operation. On the other hand, a series of individual mining and retorting

or processing operations by individual oil or mining companies would result in only partial extraction of the multiple resources and in lack of uniformity in such important matters as conservation and land restoration practices.

Second, as with communications satellite technology in 1961-62, the technology for extraction of oil from shale is still far from accomplished. Much prominence has been given to the possibility of *in situ* mining, using atomic explosions to fracture the shale. Several proposals for experiments with atomic explosions are being considered actively at this time, with the cooperation of the Atomic Energy Commission. I submit that neither experimentation nor operation of oil shale extraction by atomic explosion should be accomplished without continuing governmental control and congressional supervision.

In addition, the full scientific implications of the presence of sodium minerals in the shale are not comprehended. This multiple-mineral technology stands on roughly the same threshold of the unknown future that satellite technology did in the early 1960's. Must the three minerals be separated, then processed? Or may alumina be extracted from dawsonite in the same retorting process that withdraws oil from shale? If so, would this destroy the nahcolite and prevent production of the soda ash?

All of these questions of technology and dozens of others of a technological and economic nature have yet to be answered. To institute a leasing program under such circumstances would be the equivalent of authorization of individual communications carriers to establish satellite systems before it was even known whether such a project was feasible. In the case of communications satellites Congress wisely determined that all interests, public and private, would best be served and protected by a joint effort and that development of a system should follow consolidated efforts toward establishment of a feasible technology.

Third, these mineral resources occupy a unique position distinct from other mineral deposits. Not only are they from 70 percent to 80 percent in public ownership but their location, depth, richness, and other characteristics are generally known. Thus, the people of the United States find themselves in possession of a vastly rich combination of mineral resources the returns from which could be put to any number of beneficial public uses. Like the airwaves themselves, the resources represent a distinct and definable public treasure, and therefore a public interest.

Purely private development of these mineral resources would fail to promote and protect the public interest just as purely private de-

velopment of a communications satellite system would have failed to do the same. When the public's stake in any undertaking is so great that it cannot be protected by a single industry or combination of industries, then these circumstances dictate a unique solution—such as the ComSat Corporation. A communications satellite system is not unique merely because it involves international relations and world understanding. Congress sought to promote those objectives, but it also desired a communications system which would be “responsive to public needs and national objectives.” So, too, these publicly owned mineral deposits of such vast wealth exceed the bounds of mere economic promotion alone; their proper development is of utmost importance to all the people of this nation. They should not be permitted to be carved up into private enclaves from which tremendous corporate profits can be made with only tangential public benefits flowing from their private development. Instead, a solution should be worked out which would permit both adequate return on private investment and maximum protection for and returns to the public. These goals could well be promoted by a ComSat-type organization.

Fourth, like a communications satellite system, development of oil shale and related minerals will require extensive and continuous cooperation between private industry and interested government agencies. The Department of the Interior, through the Bureau of Mines and the Geological Survey, has substantial knowledge and experience in oil shale and other mineral matters, and through various other offices the Department has primary responsibility for establishing administrative policies toward petroleum and other mineral development. Whatever course is adopted toward the mineral resources in the Piceance basin, the government, through the Department of the Interior and other agencies, will be vitally concerned.

Public and private interests could best be coordinated through an organization such as ComSat. Instead of being developed by industry with government supervision or regulation, these minerals could most expeditiously be developed under coordinated public-private leadership. A multiple-mineral development corporation would, like ComSat, be guided by representatives of both public and private interests, but could also be a private corporation operated for profit with full responsibility to its stockholders. The key to safeguarding the public interest is in representation of that interest in policy-making and in adequate regulation by responsible government agencies.

Congress specifically designed the Communications Satellite Corporation to prevent monopolization of a public resource by a few

interests. As has been pointed out, many of the justifications for the creation of such a corporation apply equally to development of oil shale and its associated minerals. A private undertaking with proper public participation would largely solve problems of the monopoly and antitrust sort which obviously arise with regard to the future disposition of these mineral deposits. A multiple-mineral development corporation should include small corporate interests as well as the large, established oil and mining interests. In this way, the public interest is further promoted by participation of those who would otherwise be barred due to competitive disadvantages.

Finally, there are other similarities of circumstances between development of a communications satellite system and development of these mineral deposits: in both cases there are extremely high capital costs; in both cases there is a public interest in providing equitable access to the resources; in both cases development has traditionally been a private enterprise matter; in both cases there exists the threat of monopolization and exclusion of smaller interests; in both cases the resource involved is in public ownership and under government control. In his introduction to Secretary Udall's book, *The Quiet Crisis*, President John F. Kennedy said: "We must develop *new instruments* of foresight and protection and nurture in order to recover the relationship between man and nature. . . ."

There remains the problem of existing claims and leases on oil shale lands, particularly in western Colorado. Secretary Udall spoke of this problem in his policy statement and in his testimony before the Committee on Interior and Insular Affairs of the Senate on February 21, 1967. He said: "The task of clearing away a half century of legal underbrush will be time consuming, vexatious, and difficult, but it is a necessary prerequisite to the long term development of the land in question." This legal underbrush is in a large part the Department's own doing. For many years, the Department has been indecisive, vacillating, confused, and even at war with itself in this regard. It has lost sight of the principle of the natural heritage and the rights of the people and has all too often shown a clear bias toward industry. Further, Secretary Udall, himself, has shown indecision and procrastination. I am informed that several persons inside and outside the Department requested him, many months ago, to withdraw the shale lands from patenting for dawsonite and nahcolite and to restrict sodium leasing. However, the Secretary did not act until January 27, 1967. In the meantime, at least four thousand claims had been filed, embracing perhaps 450,000 acres of public land, thereby unduly complicating the oil shale development process. Secretary Udall did ask the Congress for a

federal law for the registration of all claims so that he would at least know where he stood. This is an excellent idea, for without such registration the shadow of the claims could remain forever. But I suggest that we must go further.

I proposed that the *Congress should adopt legislation reaffirming the rights of the American people and the title of the federal government to all of these disputed lands*. However, since at least some of the claims were filed and preserved in good faith (although I add parenthetically that I believe that most of them are fraudulent), legitimate claims should be recognized as having certain property rights. Therefore, I suggest that the legislation should provide a method for the compensation of just claims for reasonable out-of-pocket expenses involved in establishing the claims and maintaining them over the years. This legislation should apply primarily to claims which originated before 1920. As for recent claims for dawsonite and nahcolite and sodium I believe that these should be disallowed by legislative fiat.

But we must not be too harsh on the Department. In the law and in the judicial interpretation of the law the Natural Heritage Doctrine is largely implicit and unstated, while the law of property is buttressed by countless statutes and interpretations. For example, in finding against the Department and in favor of the plaintiffs' claims to valuable shale lands, Judge William Doyle of the United States District Court of the District of Colorado had this to say only last December:

In support of his holding that there was such jurisdiction, the Solicitor pointed to the language in *Virginia-Colorado* to the effect that the Secretary had authority by appropriate proceedings to determine that a claim was invalid for lack of discovery, fraud, or other defect, or that it was subject to cancellation by reason of abandonment. From this he concluded that the Department at all times retained jurisdiction; that is, power over these claims. As we view it, this was an unjustified interpretation of the decisions of the Supreme Court. It overlooked the basic nature in terms of property of a mining location. Both *Krushnic* and *Virginia-Colorado* proceeded on a fundamental proposition that this creates a vested property right which can be defeated only by a competitor. Historically, this was the nature and character of the mining claim and to overlook it is to change a fundamental rule of property. No amount of administrative legerdemain can overcome this fundamental principle.¹⁷

But is there really such fundamental rule or fundamental prin-

17. *Oil Shale Corp. v. Udall*, 261 F. Supp. 954, 965 (D.C. Colo. 1966). For a critical analysis of Judge Doyle's decision, asserting that the Department of the Interior clearly had authority to cancel the oil shale claims, see 39 *Colorado Law Review* 589 (1967).

ciple? And if there might be, does it really take precedence over the natural rights of two hundred million Americans to enjoy abundant and low cost energy from shale? It is my position that the property rights of the few are subordinate to the rights of many to participate in the natural heritage; and I submit that it is the responsibility of Congress, as representative of the sovereign people, to adopt legislation which will protect and ensure these rights.

It is particularly appropriate for the Congress to review and restate the Natural Heritage Doctrine at this time. Our natural resources laws have become so numerous, so complex and even contradictory that the entire situation is now being reviewed by the Public Land Law Review Commission, and no doubt the Congress will be asked to consider changes in these laws in due course. Here is an opportunity for great good or great harm. The recodification of laws could be managed in ways which would further facilitate private exploitation or could be organized in the spirit of the Natural Heritage Doctrine, holding the interest of the people to be paramount. Since the recodification of present law is intimately related to new legislation concerning shale, I urge the Congress to consider these two subjects in a common light.

Finally, Secretary Udall further stated in his policy release of January 1967 that oil shale development must be undertaken in such a way as to "prevent speculation and windfall profits." In this area the Department of the Interior has been singularly obtuse. Speculation has been rife for four or five years, and windfall profits have been realized. Also the kind of speculation most damaging of all to the American people has been going on for years. That is of the claim or purchase of oil shale lands by petroleum interest for the purpose of holding the land off the market and postponing the development of the industry. Thus the great opportunities for windfall profits still lie in the future and these could be prevented by the legislation which I suggest. We must avoid the greatest giveaway in the history of our nation. If we do not, the ensuing scandal will cause Teapot Dome to pale into insignificance. I use the word "scandal" advisedly, in the sense of "something which is shocking to the sense of truth, decency, or propriety" and which is "a cause of reproach." For the giveaway is already in progress. For example, in Colorado, the Governor has urged that the shale oil corporations be given excessive federal tax depletion allowances and that the industry be allowed import quotas under the present quota system. Further, the legislature in Colorado, acting in almost total secrecy, has exempt oil shale from the current severance tax in Colorado, probably unconstitutionally, and has provided for a 27½ percent

income tax depletion allowance for oil shale mined in Colorado. These actions are indeed scandalous, a cause for serious reproach. Neither the Governor, nor his Director of Natural Resources, nor his advisors, nor the majority of the legislators seem even to have heard of the Natural Heritage Doctrine. Instead they display unbecoming eagerness to grant special privileges to an already privileged industry.

I feel confident that, by contrast, both the executive and legislative branches of the federal government will be more sensitive to the rights of the people. I am hopeful that the Department of the Interior will promulgate regulations, and that the Congress will enact legislation, consistent with the sovereign rights and the natural heritage of the American people.

Postscript

During the last year several important developments in oil shale have occurred, all of which bear directly on the position which I have taken. Various spokesmen for the industry have attempted to refute the contention that the oil industry exhibits important monopolistic characteristics. For example, in a widely circulated speech, "A Taint of Monopoly," M. A. Wright, Chairman of the Board of Humble Oil and Refining Company, has pointed to the large number of producers of crude and the high degree of competition in refining and marketing as evidence of competition. However, the speech makes no mention of proration or import quotas. It is these two restrictions of supply which provide the monopolistic umbrella under which any number of producers and refiners may operate.

The economic situation of the oil industry has been analyzed once more by highly competent economists in a book¹⁸ published late in 1967. The conclusions reached by Lovejoy and Homan are worth summarizing in some detail.

"In the course of our study we have identified four interrelated, but separable, sources that define the nature of the industry's inefficiency and underlie its basic problems. These are (1) excessive capital investment, (2) excessive producing capacity, (3) inefficient reservoir development, and (4) proration rules that favor the production of high-cost oil. . . .

"The excessive costs of the industry are of two sorts: (1) capital costs are inflated because more wells are drilled than are necessary and (2) all these wells entail operating costs. The costs in these two categories must be further analyzed to separate two distinguishable

18. W. Lovejoy and P. Homan, *Economic Aspects of Oil Conservation Regulation* 265-75 (1967).

elements: (1) a part of the excess in costs is traceable to unused capacity; and (2) aside from excess capacity, wells are more closely spaced than is necessary for efficient drainage. . . .

"All the factors to which we have called attention cause the costs of oil to be unnecessarily high. Overinvestment and overcapacity are the most general causes. Cutting across these factors is another deliberately fostered by regulatory agencies and statutes: that of getting as much as possible of the allowed oil production from the highest-cost wells. This result is inherent in two features of the market-demand proration system: (1) the unlimited production or 'bonuses' allowed to the exempt wells and (2) the way in which proration systems favor production from the less-productive wells. The oil that is *not* produced is invariably the oil that could be produced at the lowest marginal cost. . . .

"One effect of market-demand proration is to permit prices to be maintained at a relatively high level or, to put the matter differently, to prevent the prevailing overcapacity from undermining the price structure. This level of supported prices has two main consequences. First, it permits high-cost producers to survive or, more accurately, establishes the margin of survival. This margin is also in part determined by the unrestricted production allowed to low-yield wells. Second, even in the face of low allowables available for new wells, the supported prices provide sufficient incentive for the drilling of new development wells—in fact, far more than are needed—and for a substantial investment in exploratory work. . . .

"It is interesting to speculate upon what the consequences might be of a marked increase in the productive efficiency of the industry, lowering average and marginal costs of production. It is a basic principle of competitive organization that the level of prices follows the level of costs, and therein lies one of the primary advantages of competition to the consuming public. But, as we have seen, oil prices are not determined on competitive principles. . . ."

Prospects for the immediate development of an oil shale industry are uncertain. On the one hand, there is no good economic reason for the majors to undertake oil shale production as long as current restrictions on supply through proration and import quotas remain, since any important relaxation of these restrictions would postpone oil shale development indefinitely. The possibility that the restrictions would be relaxed, while remote, nevertheless exists as does the remote possibility of modification of the 27½ depletion allowance.

On the other hand, the Oil Shale Corporation continues its research and apparently has not abandoned planning for production. Tosco, as this company is called, has permitted publication of figures which assert that oil shale can be mined and processed for under

\$1.60 per barrel.¹⁹ Tosco has stated in its Annual Report that the corporation expects to be producing oil from shale by 1970.²⁰ It seems likely that a breakthrough by this corporation would be followed by the creation of competitive plants on the part of the "majors."

Tosco's production will be on privately owned lands. The future of the public lands remains very uncertain in terms of both industry policy and government policy. However, many persons are coming to the conclusion that conventional mining methods are impossible on federal lands because of the deep overburden characteristics of the largest and richest deposits. Thus, it seems possible that development could be in two stages. First, production of oil shale on privately owned lands using mining and retorting methods; and a second stage which would involve in situ extraction on public lands.

Prospects for the development of an industry under conditions which protect the public interest seem to rest not with the Department of Interior but with Congress. This is true not only because of the ineptitude of the Department of Interior but also because of the interest of only a minority of liberal Congressmen in the oil shale problem. The most encouraging event in this respect is the introduction by Senator Proxmire of Senate Bill 2754, "To Establish a Federal Oil Shale Development Program and for Other Purposes." Senators Clark, Metcalf, Morse, Tydings, Young (of Ohio), and Robert Kennedy joined Senator Proxmire in introducing the bill. A similar bill has been introduced in the House with a number of sponsors. S. 2754 calls for an orderly ten-year program of careful study and systematic development to ensure competition in the development of oil shale and to provide the public with low-cost petroleum products while adequately protecting the natural ecology of the region against destruction or pollution. The ten-year program is to be developed in a special Office of Oil Shale and Multiple Minerals Development which is directed to carry on research in all aspects of oil shale utilization and to recommend appropriate policies for development to the Congress.

The petroleum industry has shown little interest in leasing oil shale lands under the leasing provisions promulgated by Secretary Udall May 7, 1967. Consequently, the leasing provisions are now under review and it is expected that a new set will be announced before the end of 1968.

What really is needed, however, is for Congress to decide upon and create by law a clear long-run policy for shale development consistent with the Natural Heritage Doctrine and the public interest.

19. *TOSCO Closes in on Oil Shale Mining*, Engineering & Mining J. 60 (1967).

20. *Id.*