

a matter of importance to national defense without even considering the need for the shale oil.

The title problems are two-fold: First, there is the question of the disposition of the pre-1920 placer oil shale claims; and, second, there is now the question of the post-1964 dawsonite claims and sodium lease applications. With respect to the first, the Secretary of Interior stated in the February 21, 1967, hearings that the "... task of clearing away a half-century of legal underbrush will be time-consuming, vexatious and difficult. But is a necessary prerequisite to the long-term development of the lands in question." In my opinion, the Secretary's evaluation is both fair and accurate. In the past two Congresses I have introduced legislation which was intended to give the Secretary a bag of tools with which he could commence to dispose of the pre-1920 title encumbrances in a much more speedy fashion than through the long and cumbersome method of taking each claim to court. It would have been most helpful if the Department had given me and the Interior Committee the benefit of their thinking on such legislation; however, despite repeated requests for departmental reports none were ever received, nor were any comments, suggestions or criticisms registered. As a lawyer, I am sure that you know and understand, Mr. Chairman, that such legislation is not easy to draw, because, contrary to a suggestion made earlier in the hearings, Congress must stay within the confines of the Constitution with respect to the taking of private property interests, and so long as the "Bill of Rights" is a part of our Constitution, we cannot and should not act in a cavalier fashion by riding rough-shod over the property rights of individuals. We also have a duty to be fair, for so long as the final authority of the Government resides in the people, unfairness to one is unfairness to all.

With respect to the second encumbrance on the land, that is the overlaying dawsonite mining claims and sodium lease applications, the issue is presently before the Secretary. In the present posture, Congress can be of little help or no help until the Secretary has made the initial decisions which he is required to make by law. But these decisions must be made before any long-range development program can be launched.

On Tuesday, Dr. Orlo Childs, President of the Colorado School of Mines, gave what I believe to be a very clear explanation of the need for an oil shale industry. As Dr. Childs pointed out, while we now have excess producing capacity that could now off-set our imports, our demands are growing at such a rate that our domestic production will be 4.2 million barrels per day short of our requirements by 1977. Dr. Childs based this upon a conservative estimate of 2 to 3% per year increase in demand over the next decade. I believe that his estimate was on the conservative side for I would point out to the Subcommittee that our demand in 1965 was 3.59% greater than it was in 1964, and that in 1966 was registered a 4.8% increase in demand over 1965.

I have some tables on oil consumption, production, imports, reserves and drilling activity, which were furnished to me by the Office of Oil and Gas which I believe are pertinent to this matter of need, and I ask that they be included in the record. I would like to direct your attention to the table showing total U.S. consumption and the table showing proved reserves of total liquid hydrocarbons. In comparing the total demand figures with the total proved reserves, including both reserves of crude oil and natural gas liquids, a trend is apparent. Total demand in 1946 was 1,945,909,000 barrels and total reserves were 24,016,779,000 barrels; or, the total reserves were about 12½ times the annual demand for 1946. By 1966 total demand had increased to 4,397,469,000 barrels (about 126%) while total reserves had increased only to 39,780,254,000 barrels (about 65%); or, the total reserves were only about 9 times the annual demand. In other words, our demand rate increased 61 percent more than our reserves increased. Increases in reserves have not kept pace with increases in demand. I am not suggesting that we are out of conventional oil or that we will be in the next few years, but the trend is evident and if it should continue, and indications are that it will, we shall become a crude deficient country. As Captain Howard Moore, USN, Director of the Naval Petroleum and Oil Shale Reserves underscored in his statement before the Interior Committee on February 21 of this year: "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."

I think this is very true, and we must consider the lead-time involved in getting the oil shale industry into the economic mainstream of the energy industry. For example, if we assume that the oil shale resource could contribute just ten percent