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The Oil Shale Advisory Board

BY H. BYRON MOCK*

When the editors of this publication asked me to comment on the Oil Shale Advisory Board the opportunity and challenge required acceptance. The board had been appointed by Secretary of the Interior Stewart L. Udall and first convened on July 7, 1964. Followers of oil shale problems know the report of the board was submitted in February of 1965 and consisted of twelve pages of report and six separate statements, one by each board member, covering an additional twenty-nine pages.¹ Some have labeled it a report with six dissents. To readers, but particularly to the six board members, such a result was frustrating. There were strong differences among the six, but in my opinion a broader area of agreement existed than we had time to hammer out. For this reason I am challenged to show that the report was not six dissents, but actually was six majority opinions.

I. SCOPE

The scope of this article is limited to the deliberations of the Oil Shale Advisory Board. Initially, I had a typical lawyer's irresistible impulse to try to cover the oil shale problems exhaustively, both policy deliberations and legal issues. In view of the able authors who are discussing many of those facets in this publication, the irresistible has been resisted; not entirely perhaps, but I have tried.

These comments propose to discuss the three problems suggested by the editors, namely:

1. Provide underlying background of the oil shale controversy;
2. Analyze the various arguments developed within the Oil Shale Advisory Board; and
3. Suggest necessary conclusions for guidelines which might be followed in development of both legislative and administrative policies.

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¹ Interim Report of The Oil Shale Advisory Board to The Secretary of The Interior, February 1965, transmitted by letter of Chairman, Joseph L. Fisher, February 15, 1965, 43 pp.

II. BACKGROUND

My interest in oil shale problems dates back to January 1, 1947, the date I assumed duties as the first Bureau of Land Management Regional Administrator for Colorado and Utah. Almost from the first day staff members working on mineral problems called my attention to active oil shale interests frustrated in their efforts to patent oil shale placer claims. In mid or late 1948 then Secretary of the Interior Julius A. Krug traveled to Glenwood Springs, Colorado, on a Denver and Rio Grande train fueled by shale oil. There he met with a large gathering of industry leaders and land or claim owners and gave his blessing to efforts to remove Interior obstacles to oil shale development. Before we left the concluding dinner meeting several delegations had demanded of me some affirmative action to implement the Secretary's stated goals. We tried. Numerous meetings were held with oil shale interests. With particular clarity are the several oil shale sessions at the annual Colorado Mining Congresses in Denver remembered. They were challenging and stimulating meetings. The President's Materials Policy Commission (commonly called the Paley Commission) had published predictions as to oil that the United States would "find it economical to turn increasingly to foreign supplies, and eventually to liquid fuel from shale and coal."² The Commission also stated ". . . synthetic oil, probably first from shale and later from coal will come into commercial production within a decade or so — perhaps sooner."³ From all these meetings and reports a very basic fact emerged: the problem of unpatented mining claims and other factors contributing to a scattered land ownership pattern made it economically doubtful that either federal or privately owned lands could be developed independently. The Colorado problems were most heavily emphasized, but owners or claimants to oil shale lands in Utah were active too. My jurisdiction did not include Wyoming, so there is no first-hand knowledge of that area.

On September 2, 1952, we had reached the stage where the problems and remedies seemed reasonably clear to us in the field. On that date, over my signature as Regional Administrator, we sent by telegram a "statement submitted for oil shale justification." It is best summarized by quoting the first portion:

Inadequate ownership information and failure to investigate validity of unpatented claims are obstructing development of an oil shale industry. The ownership pattern is so confused that neither government leasing of shale lands nor development of private holdings is

² PRESIDENT'S MATERIALS POLICY COMMITTEE, RESOURCES FOR FREEDOM, Vol. I, *Foundations for Growth and Security*, p. 107 (June 1952).

³ *Ibid.*, Vol. III, *The Outlook for Energy Sources*, pp. 8-9 (June 1952).

feasible. The U. S. Geological Survey has outlined the bodies of oil shale deposits; the Bureau of Mines has proved the feasibility of extracting oil from shale; oil companies are attempting to block shale holdings, as well as doing experimental work. The President's Materials Policy Commission has indicated that oil shale development is not only inevitable but imminent; but, if the ownership problem is not cleared up in advance, confusion as to ownership can block oil shale development in a period when time may be of the essence.

The principal oil shale deposits are located in Colorado, Utah, and Wyoming. The area of highest potential industrial development and of highest present interest is in Colorado. The deposits are principally on public lands. Except for those areas subject to mining claims, the government has withdrawn all oil shale lands from access and development. The problem is to determine which lands are subject to valid mining claims and to block private and public holdings.

The BLM is the agency responsible for solving the problem. Specifically the steps which would be taken are: first, collect data to allow determination of Federal and non-Federal ownership claims. This would involve: (1) obtaining from BLM land office records information to identify mineral ownership retained by U.S. on lands; (2) obtaining from other Federal agencies and county records the record of lands re-acquired by the U.S.; (3) obtaining from BLM Archives, and other files complete record of all withdrawals and restoration orders which affected availability of public land for mineral entry; (4) obtaining from BLM offices records of any other action which segregated lands from mineral entry; and (5) obtaining from county recorder's office record of all unpatented mining claims in the area.

Second: Clarify land descriptions by (1) as necessary, completing cadastral surveys, either original or re-survey; (2) processing mineral surveys; and (3) verifying location of mining claims by field check of monuments.

Third: Accelerate processing of claims to patent by (1) comparing claim with withdrawal and other segregation records to determine validity of claim at time of filing; (2) making field check of discovery and of necessary development work; and (3) issuance of patents.

Fourth: Cancelling invalid claims, as required.

Fifth: Blocking public and private oil shale holdings by (1) analyzing and mapping land ownership pattern in shale area; (2) initiating and processing exchanges of mineral lands to achieve solid blocks of holdings under private or public ownership; and

Sixth: Issuance of leases for shale lands as requested.

Even earlier, by August 22, 1952, Howard J. VanderVeer, then Regional Chief for Minerals, and others of my staff had already prepared, and without undue difficulty persuaded me to sign and submit, a "Proposed Project to Remove Public Land Obstacles to Oil Shale Development." On that date such a proposal, consisting of some seventeen pages and fourteen separate exhibits, was forwarded to the Director of the Bureau of Land Management in Washington, D.C. For various reasons the project was never approved, nor even,

so far as my knowledge goes, presented to the Budget Bureau or Congress.

In early 1954, my area of jurisdiction as a Bureau of Land Management field administrator was changed to exclude Colorado, but to add to Utah the States of Idaho, Nevada, and Arizona. Nevertheless, my interest in oil shale continued to be one of active participation as to all states because of membership on the Interior Department Colorado River-Great Basin Field Committee. Service as BLM (Bureau of Land Management) representative on that Committee ran from January, 1947, until my government service ended in February, 1955. The frequent meetings and annual study reports of that Committee placed steadily increasing emphasis on oil shale. There were coordinated presentations by representatives of the Bureau of Mines, U.S. Geological Survey, Bureau of Reclamation, the Bureau of Land Management, and to some extent by other agencies of Interior.⁴ The inevitability of an oil shale industry was not doubted. Identification of the responsibility of each agency to further such development was our goal. In the analyses extensive consideration was given to the place of oil shale in relation to water power, to oil and gas, to fissionable source materials, and to other energy sources.

Very early I forcibly learned that long before my exposure to oil shale problems in 1947, extensive studies and action programs had been developed in that field.

Passage of the Mineral Leasing Act of 1920⁵ recognized extensive prior mining claim activity, and included language allowing prior located oil shale claims to be perfected thereafter "including discovery." There were the regulations for oil shale leasing issued in the 1920's.⁶ There were the records of relinquishments, also in the early 1920's, made by some mining claimants in return for the promise of preference leases as provided by law.⁷ Some relinquishments had been accepted and at least in some cases recorded; the preference leases to this day have not been issued and conceivably may still be pending. There were the *New York World* articles of about 1928 by a General Land Office Regional Field Examiner crying out against the acquisition of oil shale claims by large oil

⁴ E.g., PACIFIC SOUTHWEST FIELD COMMITTEE, PROGRAM FOR THE PACIFIC SOUTHWEST REGION, 1956-1961, March 1954, p. 3.

⁵ 41 Stat. 437, 451 (1920) as amended, 30 U.S.C. § 193 (1965).

⁶ Circ. 1220, June 9, 1920 (53 Interior Dec. 127; 43 C.F.R., part 197 (1965).)

⁷ 41 Stat. 445 (1920), 30 U.S.C. § 241 (1965).

companies as being improperly monopolistic.⁸ The 1930 Executive Order withdrew and reserved designated shale lands, subject to valid existing rights, for investigations, examinations, and classification.⁹ Then came the Interior Department's abortive efforts to cancel hundreds of oil shale claims on the theory that assessment work had to be kept current on such claims or the claims would become invalid.¹⁰ Next came the two Supreme Court cases repudiating the departmental attempt.¹¹ Later there was the Shale Oil Company ruling wherein the Department "reversed" previous rulings that were contrary to the later Supreme Court ruling.¹² I also recall seeing departmental correspondence indicating no reinstatement need be made of claims previously declared null and void for lack of assessment work. Even more directly indicating the significance of the "reversed" ruling was the subsequent issuance of patents to thousands of acres of claims. Many of these claims were of the class which the Department's Solicitor of 1964 was to rule,¹³ contrary to the actions of contemporary officials and, despite the Supreme Court rulings,¹⁴ were null and void at the time of various administrative decisions of the late 1920's and early 1930's. Probably most impressive to me was the large number of dedicated mining men who had sunk every available dollar into developing and retaining and patenting oil shale claims. Even then sons of those original pioneers were succeeding to the struggle as the original pioneers began to die off. Today only a few of those original dedicated working dreamers still survive. Neither they nor we public officials of those days knew nor suspected that their claims were then null and void for procedural reasons and that the revelation¹⁵ would be forthcoming in 1964, notwithstanding the even then "long established administrative practices."

There is no need here to elaborate further on these matters. They are mentioned as background and because it is always a source

⁸ "Statement of Under Secretary of the Interior, John A. Carver, Jr. Before the Senate Committee on Interior and Insular Affairs concerning Oil Shale, May 12, 1965," mimeographed copy, page 4, referring to 1931 hearings of the Senate Committee on Public Lands and Surveys to Senate Resolutions 379, 71st Congress, and to other historical events regarding oil shale.

⁹ Exec. Order No. 5327, April 15, 1930.

¹⁰ The BLM Land Offices of Colorado, Utah, and presumably Wyoming, may still have the land files and references to the land and file designations of the numerous actions initiated.

¹¹ *Ickes v. Virginia Colo. Dev. Corp.*, 295 U.S. 639 (1935); *Wilbur v. Krushnic*, 280 U.S. 306 (1930).

¹² *The Federal Shale Oil Co.*, 55 Interior Dec. 287 (1935).

¹³ *Union Oil Co. of Cal.*, A-29560 (April 17, 1964), 71 Interior Dec. 169 (1964); later supplemented as to "adequacy of service" elements by the Solicitor's Opinion, A-29560-A (July 3, 1965).

¹⁴ Cases cited note 11 *supra*.

¹⁵ *Union Oil Co. of Cal.*, 71 Interior Dec. 169 (1964).

of amazement to learn one's efforts are not an initiation of new ideas and actions, but only a continuation and only a relatively small part of many extensive contributions by others. Here, as many times before and since, it was impressed upon me how essential is a full factual background for sound decisions.

By April of 1963 it was reported that new oil shale regulations would be issued soon. Newspaper articles attributing such statements to responsible Interior officials appeared in August 1963.¹⁶ Some deterring problems seem to have arisen and on November 5, 1963, Secretary of the Interior Stewart Udall invited "suggestions from the public at large looking toward formulation of a program to foster the orderly conservation and development of the vast federally owned oil shale deposits in Colorado, Utah and Wyoming."¹⁷ A February 1, 1964, deadline for comments was fixed. Some oil men construed this to mean Interior feared to act without Congressional direction because of possible implications of "Another Teapot Dome Scandal" if lease terms were too generous or a "Scrooge" appellation if conditions imposed restricted development.¹⁸

III. CREATION OF THE OIL SHALE ADVISORY BOARD

The above explains my pleasure at receiving and being able to accept with high hopes the invitation of Secretary of the Interior Stewart L. Udall again to study oil shale problems. The invitation came in his letter of June 4, 1964, asking me "to serve as a member of a special Oil Shale Advisory Board . . . to analyze this whole problem." The problem was stated as being: "If the national interest is to be served, and this resource is to make an optimum long-term contribution to the economic well-being of the nation, the major public policy questions need to be identified and evaluated at the outset."

The Secretary proposed "a study in depth of this whole problem."

IV. FIRST MEETING, JULY 7, 1964

The initial meeting was held in Washington, D.C., on July 7, 1964; members present were:

Orlo E. Childs, President, Colorado School of Mines,
Golden, Colorado

¹⁶ See e.g., Bernick, *Up and Down the Street: Interior Eyes New Rules for Oil Shale*, Salt Lake City Tribune, Aug. 25, 1963.

¹⁷ U.S. DEP'T OF THE INTERIOR PRESS RELEASE (P.M. 37328-63), "Oil Shale Development Suggestions Invited by Interior," for release November 5, 1963; Also, 28 Fed. Reg. 11796, (1963).

¹⁸ Bernick, *Up and Down the Street: Oil Shale Potential Starts Brush Fire*, Salt Lake City Tribune, Nov. 10, 1963.

Benjamin V. Cohen, Attorney, Washington, D.C.
Joseph L. Fisher, President, Resources for the Future, Inc.,
Washington, D.C.
John Kenneth Galbraith, Professor, Harvard University,
Cambridge, Mass.
Lt. Gen. (Ret.) James M. Gavin, Chairman of Board,
Arthur D. Little, Inc., Cambridge, Mass.
Milo Perkins, Economic Consultant, Tucson, Arizona
H. Byron Mock, Attorney, Salt Lake City, Utah.¹⁹

General Gavin attended our first meeting, but press of other assignments unfortunately prevented his attending later sessions and he subsequently resigned before the report was prepared. Secretary Udall presided. Also present were then Assistant Secretary for Minerals John M. Kelly, who was the alternate co-chairman from the Department, then Assistant Secretary for Public Lands (now Undersecretary) John A. Carver, Solicitor Frank M. Barry, and a tremendous array of experienced and able men from all parts of the Department. Members of the press were also present. Of major importance in this and all subsequent Board meetings was the presence of Captain Kenneth C. Lovell (USN), head of the Defense Department oil shale program.

Secretary Udall stated that he placed no narrow limits on the areas to be considered by the Board.²⁰ He then outlined "broad areas of policy that have come to the surface in our exploration of this problem."²¹ In abstracted statements they were:

. . . First, we must choose those policies which will assure that oil shale development makes its optimum contribution to the Nation's economy over the long term . . .

Second, careful consideration must be given to the implications of oil shale development on our national and collective security . . .

Finally, our actions with respect to oil shale must emphasize its conservation, not in the sense of hoarding, but in the creative sense of efficient recovery and wide use . . .²²

The Secretary emphasized then and throughout our subsequent meetings that he wanted our independent unguided analysis. In later meetings he broadened his remarks to say he did not expect unanim-

¹⁹ U.S. Dep't of the Interior, *Press Release* (P.N. 48827-64), "First Meeting of Oil Shale Advisory Board Set for July 7," for release July 3, 1964.

²⁰ U.S. Dep't of the Interior *Press Release* (P.N. 49030-64), "Opening Statement by Secretary of the Interior Stewart L. Udall at the first meeting of the Oil Shale Advisory Board, Washington, D.C., July 7, 1964," for release July 7, 1964.

²¹ *Ibid.*

²² *Ibid.*

ity and welcomed divergent views as a guide to exercising his special responsibility.

Key departmental technical personnel were then presented by Assistant Secretary Kelly and spoke on:

- "Future Place of Oil Shale in the
Energy Mix" V. E. McKelvey
of the U.S. Geological Survey
- "Legal Problems" T. J. Cavanaugh
of the Solicitor's Office
- "Technology of Hydrocarbon Fuels" J. S. Rosenbaum
of the Bureau of Mines

We also were provided prepared statements for background purposes.²³

Subsequently, in our executive session, Secretary Udall asked us to select our own Chairman, and Joseph L. Fisher, one of those headquartered in Washington, was chosen. We then agreed that each would submit to the Chairman an outline of issues which he felt required resolution.²⁴ Responsibility for the numerous details

²³ Material supplied before or at the initial meeting included:

1. *Background Data for Oil Shale Policy, March 1964*, prepared for Secretary Udall by the Bureau of Mines, Geological Survey and Office of Solicitor, 56 pp.
2. *The Oil Shale Policy Problem*, "a synopsis prepared for the opening meeting of the Department of the Interior Oil Shale Advisory Board, July 7, 1964," 46 pp.
3. "Summary of Suggestions from the Public for Oil Shale Program," Office of Assistant Secretary—Mineral Resources, April 12, 1964, 38 pp.
4. Map: "Oil Shale Deposits of the Piceance Creek Basin in Northwestern Colorado," D. of Int., B. of Mines," revised June 25, 1964.
5. Cowan, *A Bibliography of Bureau of Mines Publications on Oil Shale and Shale Oil, 1917-1963*, Revised December 1963, Laramie Petroleum Research Center, H. M. Thorne, Research Director.

²⁴ Data received included:

1. Papers presented to the *Western Resources Conference*, Oil Shale Section, Boulder County, Colorado, July 17, 1964, including:
 - a. Steele, "Basic Research in Appraising the Future of Shale Oil."
 - b. Landsburg, "Factors in the Long-Range Competitive Setting of Shale Oil."
 - c. Kelly, "Remarks of John M. Kelly, Assistant Secretary of the Interior—Mineral Resources, Before the Western Resources Conference."
 - d. Jackson, "Legal, Political, and Administrative Problems in Oil Shale."
2. Gooding, "Interdepartmental Energy Study, Research and Development in the Petroleum Industry," September 27, 1963, 7 pp.
3. Calhoun, "Leasing for Oil Shale Development on Public Lands," memorandum, July 9, 1964, 9 pp.
4. Donnell, *Tertiary Geology and Oil Shale Resources of The Piceance Creek Basin Between the Colorado and White Rivers Northwestern Colorado*, GEOLOGICAL SURVEY BULL., 1082-L, GPO 1961.
5. Quarterly of the Colorado School of Mines, "First Symposium on Oil Shale," Vol. 59, No. 3, July 1964.
6. THORNE, STANFIELD, DINNEEN, AND MURPHY, OIL SHALE TECHNOLOGY: A REVIEW, U.S. Dep't of Interior, B. of Mines, Info. Circ. 8216, 1964, 24 pp.

of our work was placed in Eugene W. Standley, Staff Engineer to Assistant Secretary Kelly. He ably absorbed those headaches for us.

Before discussing the development of issues, let us look at our total schedule through filing of our "Interim Report" in February 1965. As noted, material was sent us by Chairmen Fisher and Kelly as well as by Secretary Udall. Before adjourning on July 7 we agreed to meet in September for a visit to the principal oil shale area of Colorado, Utah, and Wyoming.

We gathered via Denver and Grand Junction at Rifle, Colorado, about noon on Sunday, September 13, 1964, and participated briefly in the Open House being held that day by Socony Mobil and Humble and others operating the Anvil Point Oil Shale Research Center at Rifle, Colorado, with the Colorado School of Mines on facilities acquired through the school from the Department of the Interior. We then went to Bureau of Mines facilities and held an afternoon executive session with Secretaries Udall and Kelly and other Interior personnel present. In the evening we returned to Grand Junction. On Monday in a Navy plane the Board viewed the tremendous hydrocarbon energy area of the vicinity. We flew over the Union Oil Company's experimental site; the Anvil Points experiment station in the Naval Oil Shale Reserves No. 1 and No. 3; the sodium prospecting area; Sinclair Oil Company's *in situ* shale oil operation; and another area that is considered favorable for oil shale stripping operations. Proceeding on the extensive tour we flew over the Rangely Oil Field, the Hell's Hole Canyon area where exposures of oil shale in the Green River Formation can be seen, the Bonanza Gilsonite area with its veins of solid hydrocarbon, and the Red Wash Oil Field with production mostly from the Green River Formation. Beyond Vernal, Utah, we flew in the vicinity of the Asphalt Ridge, the White Rocks area with its exposure of oil-impregnated Navajo sandstone, the Sunnyside asphalt deposits with the oil-impregnated sandstone beds in the Green River and Wasatch Formations, and back over Naval Oil Shale Reserve No. 2. En route we passed over several areas of interest, but in general we got a comprehensive view of the vastness of the area and the interrelation not only of oil shale but other sources of energy that are present in the vicinity. A business session was held all afternoon at Rifle and then continued at dinner and afterwards in Glenwood Springs. The following morning, the 15th, we met for two hours and then broke up to follow our respective courses for home. The informa-

tion provided us was beginning to ferment. The discussions were active and beneficial. Issues began to be drawn.²⁵

The Board had generally agreed that we could not proceed to any final conclusions without an opportunity to hear the non-governmental advocates of oil shale activity. Accordingly, our next meeting was scheduled to hear those who had information of value for us.²⁶ It was held in Washington, D.C., beginning November 29. We listened to presentations by numerous capable and interested companies and individual spokesmen;²⁷ the pointed comments on

²⁵ At Rifle, Colorado, talks were given by:

1. Governor John A. Love, Colorado.
2. Professor James Gary, Colorado School of Mines, "Technology of In Situ Recovery of Oil from Shale."

At or subsequent to the Rifle meeting, the following data was provided to the Board:

1. "Summary of Oil Shale Resources of the Green River Formation in Colorado, Utah, and Wyoming," U.S.G.S., (undated, but presented Sept. 14, 1964), 14 pp.
2. "Earlier Oil Shale Proposals" (received by the Department), list of eight proposals (undated, but mailed September 25, 1964), 2 pp.
3. "Memorandum from the President Addressed to the Heads of the Executive Departments and Agencies on Government Patent Policy with Statement Attached," copy of pp. 18320 and 18321, CONG. REC., October 10, 1963.
4. McKelvey, "Economic Problems Attending Oil Shale Development," September 13, 1964, 25 pp.
5. Cavanaugh, "Disposition of money received under the Mineral Leasing Act," September 8, 1964, 3 pp.
6. Love, "Remarks by Governor John A. Love before National Oil Shale Advisory Committee," Sept. 13, 1964, 4 pp.

²⁶ U.S. DEP'T OF THE INTERIOR PRESS RELEASE, P.N. 54892-64, Office of the Secretary, "Oil Shale Advisory Board to meet with Industry," Nov. 13, 1964.

²⁷ Parties represented and documents presented included:

1. Governor John A. Love of Colorado, and associates, Ted Stockmar, Russell Cameron, Richard Eccles, Jack Tweedy, Frank Cooley and Richard Schmidt; "Statement of John A. Love, Governor of Colorado, to the National Oil Shale Advisory Board, Dec. 1, 1964, 6 pp.; and "Supplementary Written Statement of Governor John A. Love to the Oil Shale Advisory Board," December 1, 1964, 60 pp.
2. Messrs. O'Brian and Bradley, National Coal Association: "Statement to the Oil Shale Advisory Committee of the Department of the Interior, by Robert E. Lee Hall, Vice-President," (undated), 4 pp.
3. Curtis Morris, American Gas Association: "Statement Prepared for Oil Shale Advisory Board," December 1, 1964, 6 pp.
4. Dr. Charles F. Jones and Ray Sloan: a letter from Dr. Charles F. Jones, President, Humble Oil and Refining Company, Dec. 9, 1964, on "Research," with enclosures, 20 pp.
5. F. W. McWilliam, Rocky Mountain Oil and Gas Association: letter to Oil Shale Advisory Board, by F. W. McWilliams, Nov. 25, 1964, 2 pp.
6. Messrs. Hayes, Stones, Brown, and Black, Shell Oil Company: "Statement of Shell Oil Company Representatives before Oil Shale Advisory Board," Nov. 30, 1964, 4 pp.
7. N. B. Carson and Bruce Grant, Sinclair Oil and Gas Co.: letter to Oil Shale Advisory Board by J. B. Kennedy, President, Nov. 24, 1964, 3 pp.
8. T. W. Nelson, Dr. Dayton H. Clewell, and Jack E. Earnest, Socony Mobil Oil Co., Inc.: "Opening Statement to Oil Shale Advisory Board by T. W. Nelson," Dec. 1, 1964, 10 pp.

many of the issues began to make clear the developing line of the report. The three-day meeting ended on a note that we needed at least one more session to bring our thoughts into final form and again try to resolve differences that were appearing.²⁸

The final meeting of the Oil Shale Board was held in Washington, D.C., beginning on Sunday, January 17, 1965, and continuing through the 18th. It was agreed that we had to get the report in by the 1st of February and this was the target we all set out to reach. Chairman Joseph Fisher was having a rough time getting a consensus, but he never ceased to strive toward it.

V. ISSUES

Against the chronological background we now can begin to develop the issues considered by the Board. At the initial meeting and carrying over into the issues proposed later in writing, three principal questions emerged. They were: First, would present opening of federal oil shale lands to development threaten our existing economy; second, is it in the public interest to proceed with developing an oil shale industry; third, can a method be provided for opening federal oil shale lands to development that affords full protection to all interests. The above was my conception of the basic issues, based on preliminary materials supplied to us and on my own personal experience. Each of the Board Members had agreed to send in a statement of his tentative proposals for the subject matter that the Board would consider. Of the five presented and distributed to the Board, mine was far from the most profound.

9. H. I. Koolsbergen, M. M. Winston, and A. F. Lenhart, The Oil Shale Corporation (TOSCO): "Oil Shale Development on Federal Lands, Supplemental Written Statement of the Oil Shale Corporation to the Oil Shale Advisory Board," Nov. 30, 1964, 37 pp.
10. John R. Pownall and John Allen, Union Oil Company of California: "Statement on Oil Shale Policy Matters to the Oil Shale Advisory Board of the U.S. Dept. of the Interior by John R. Pownall," Dec. 1, 1964, 6 pp.
11. J. H. Smith, Jr., and John Savage, Valley Landowners Association: exhibits of letters, 12 pp.

²⁸ Additional data received at or after the November-December meeting included:

1. "Developments at Rifle Oil Shale Plant under Lease Agreement with Colorado School of Mines Research Foundation," (undated, but mailed Dec. 4, 1964), 2 pp.
2. EAST, and GARDNER, OIL SHALE MINING, RIFLE, COLORADO 1944-56, U.S. Dep't of the Interior, B. of Mines Bull. 611, 1964, 163 pp.
3. Prien, Denver Research Institute, University of Denver, "Oil Shale-Current Status of U.S. Oil Shale Technology."
4. "Shale Oil: Colorado, Utah and Wyoming." Charts and schedules, U.S.G.S., Nov. 30, 1964, 13 pp.
5. Stoddard, "Surface Resource Protection-Oil Shale Exploration and Development," prepared by BLM for Oil Shale Advisory Board, (undated, but presented Nov. 29, 1964), 5 pp.

However, since it was mine, I feel free to use it. As submitted on July 16, 1964, it read:

Questions and subquestions proposed for resolution by the Advisory Group on Oil Shale are:

- I. Does the "public interest" require control of the development of oil shale production?
 - A. What "public interest"?
 1. Defense needs?
 2. International commitments?
 3. National energy requirements?
 4. National economy:
 - a) Industrial development
 - b) Area development
 - c) Protection of current capital investment
 - (1) Investments in the petroleum industry or the energy supplying industries
 - (2) Investment in oil shale investments
 - (a) Realty and deposits
 - (b) Research investment
 - (c) Improvements
 - d) Prevention of waste of oil shale resources
 - e) Prevention of waste of other resources
(i.e., mineral, vegetative, space, recreational, etc.)
 - B. Should control be restrictive or incentive or flexible?
- II. What is the procedural method desirable and possible for federal control of the oil shale resource?
 - A. Availability of federally owned resources for leasing?
[NOTE: Factual data required with some detail to determine feasibility includes:
 1. What is the true pattern of ownership of the oil shale resources?
 - a) Federal
 - (1) Unencumbered
 - (2) Subject to doubtful mining claims
 - (3) Subject to probably valid mining claims
 - b) State
 - c) Privately owned
 - (1) Unquestioned fee title
 - (2) Questioned patents
 - (3) Mining claims}
 - B. Clearing of non-federal titles for initiation of development
 1. Final decision as to patentability of claims or as to right to develop unpatented claims.
 2. Exchange program to block federal and non-federal holdings into economically feasible units.
 - C. Other controls of production as to either federal or non-federal holdings, or both
 1. Restrictive regulatory agencies, pro-ration, allowables, etc.
 2. Incentive
 - a) Title security
 - b) Exchanges
 - c) Opening to leasing
 - d) Tax adjustments
- III. Other questions arising from above as to timing, responsibility, etc.

After Co-chairmen Fisher and Kelly and others in Washington had had an opportunity to review all the recommendations a statement of "Issues to be Considered by the Oil Shale Advisory Board" was sent out. (My recollection is that mine reached me about September 3.) Since it shows the developing thought at that stage, it is quoted here as follows:

ISSUES TO BE CONSIDERED BY THE OIL SHALE ADVISORY BOARD

- I. Should the Federal Government take any action at this time to permit development of oil shale on Federal lands?

Oil shale was withdrawn from disposition under the Mineral Leasing Act by Executive Order in 1930.

* * *

The first task of the Board is to advise whether underlying conditions have so changed since 1930 as to make it advisable to withdraw the Executive Order and permit some form of development of oil shale on Federal lands to proceed.

- II. On the assumption that the Board recommends that development should not proceed now, what is its advice as to the circumstances under which development should proceed later? It is possible, for example, that the Board might make development contingent upon an energy supply shortage not now imminent, or on resolution of the problem (and hence extent) of privately owned shale lands, or on private development of a suitable technology and a dynamic competitive industry based on lands now in private ownership.
- III. Experimental or commercial scale development?
- A. The Board might recommend that the Government proceed toward development immediately, beginning with an experimental or developmental phase to be undertaken at either Federal or private expense.
- B. Commercial development poses two broad alternatives:
1. Uncontrolled development
 2. Development in which the Federal Government influences to a greater or lesser extent the timing, mode, and rate of development.
- In the event that 1. is adopted, no further basic policy questions would remain.
- In the event that 2. is recommended as the course of action, the Board should give advice as to the extent to which the following should influence Federal oil shale policy:
- a) Impact on other fuels
 - b) Contribution to national economic growth
 - c) Contribution to national security
 - d) Impact on regional economic development
 - e) Impact on international relations
- IV. Having provided advice on the foregoing, four problems will remain to be resolved by the Secretary of the Interior, and the Board may wish to offer its advice on one or more. These problems—essentially residual of the broader policy considerations that the Board will deal with in I through III above, are:
- A. What specific programs should be followed to stimulate advances in oil shale technology?

1. Intramural research
2. Contract research
3. Privately financed research
 - a) incentives
- B. What should be the mechanics of private access to the public lands?
 1. Competitive leasing
 2. Noncompetitive leasing
 3. Concession arrangements
 - a) Based on area?
 - b) Based on volume of oil?
- C. What means should the Government use to influence rate and mode of development?
 1. Taxation
 2. Subsidies
 3. Production limitations
 4. Federal participation in earnings
- D. For what purpose should Federal revenues arising from oil shale development be used?
 1. States
 2. Reclamation or other special funds
 3. General receipts

(Mineral Leasing Act of 1920 stipulates 37.5% to States, 52.5% to Reclamation Fund, 10% to general receipts. Some states earmark their shares for special purposes.)

In the beginning two premises had been casually accepted and they operated as an impediment to the initial approach. Those premises were: First, that opening of the federal oil shale reserves could ruin the petroleum industry of the United States, and second, that the oil shale reserves within the United States were so completely controlled by the federal government that there could be no oil shale industry until the federal reserves were opened. By the time of the Rifle meeting in September of 1964, the second of these had been largely repudiated. Discussions of the reserves in Utah and Wyoming showed that there were substantial areas where the Federal Government did not control. This was clear in Utah and implied as to Wyoming. The presence of patented claims in an interspersed fashion was revealed in Utah as well as the presence of state owned school sections in the oil shale area.

Despite this, the presentations by the Department of the Interior personnel continued to be largely focused on the Piceance Basin with particular reference to the heartland of the vast oil shale reserves lying at depth. This heartland as I recall was not fully identified in the early 1950s when the Bureau of Land Management was considering an active program for opening the oil shale lands. Surrounding this heartland is an area of controverted oil shale claims which the federal government has, over the years by one means or another, attempted to invalidate. They are still in contro-

versy. The next ring away from the heartland consists of patented properties lying at lesser depth and with less thickness. Running through the heartland and both of the rings are areas of patented oil shale lands where the outcroppings have been revealed and where the parties had proceeded to patent in years past. Even the emphasis on the Piceance Basin heartland did not fail to reveal that the interspersed private holdings could still proceed without waiting for the lifting of the federal withdrawal order which prevented issuances of leases on federally owned resources.

Interestingly enough the result of the revelation that the federal government did not dominate the oil shale industry by withholding its reserves and, therefore, could not dictate the nature of the development completely was to cause an attack on private owners of oil shale lands for not having gone forward with development. The implication was that it made no difference whether the federal government opened the public lands and, therefore, we had no urgency in proceeding. This line of argument increased in force up to the final draft of the report. At least in my opinion, the presentation that was made in late November and early December when representatives of the private economy appeared before us, completely answered this argument.²⁹ The fear that a government-operated oil shale industry might come into being after private industry had gotten started in the less rich lands was a ghost that kept appearing. The other element was that private capital having been spent in the development and showing the way might give latecomers a chance to pick up federal leases and compete without having the vast initial investments that appear to be necessary. The other factor which was apparent as we saw the pattern of land ownership was that control of segments of federal land is essential to creating an economic block of state and fee lands in practically all areas.

The first premise as to the threat to a domestic petroleum industry was rebutted not only by the testimony of the representatives of the private segment of our economy but also by the facts that were continually presented to us by the Department of the Interior. Those facts revealed that the cost of extracting kerogen from shale was far greater than the cost of extracting petroleum from a well. The initial investments are greater and for a foreseeable period the margins of profit would be quite low, if they existed at all. The ability to compete against petroleum, domestic or foreign, is of substantial doubt. The need to make vast expenditures in the development of techniques as well as in the acquisition

²⁹ See note 27 *supra*.

of the reserves and the construction of the plant facilities indicated that only by some sort of consortium could small operators hope to become active in an oil shale industry. This caused some concern. The interesting result of all the discussions was that on one hand we were being told that the resource was of such tremendous value that no one should be allowed to reap the rich harvest of profits from proceeding; while on the other hand we were told that there was no market for the product and that no one could presently or foreseeably treat the oil shale as a valuable mineral deposit for purposes of discovery under the mining laws. One of the men appearing before us, representing what is probably the major producer of petroleum in the United States, stated emphatically that he felt the oil shale would eventually find its place in the energy complex, that it would be phased in and take its position but that it would not be destructive of the petroleum industry. In reply to a question as to why he felt his company should be "subsidized" by having all or part of the vast oil shale reserves "alienated" to it, he replied, "You may call that a subsidy; I certainly do not." One of the Board members later commented that it was the first time he had heard competitive bidding proposed for subsidies.

The developing of the issues ran into one major problem. The members of the Board, with certain minor exceptions, were men of such tremendous intellectual power that they were able to tackle and resolve problems rapidly. There was no false modesty about ability, but to me, as a bystander, that tremendous intellectual ability tended to carry us past certain common facts that might have justified further exploration. There is always a tendency for intelligence to abhor a vacuum. If no immediate explanation of a phenomenon is present, one is found. The need for broad factual information is particularly important in such an atmosphere. The stress of time, the urgency to complete, the desire to serve, all mitigated against the exhaustive treatment that each would have preferred.

At the Rifle discussion two additional issues were emphasized; they had been present before. The first was the problem of the legal interpretations in determining whether unpatented oil shale claims were valid. The Board was not unaware of comments throughout the country that the United States had repudiated the word of its employees over the years by issuing a 1964 opinion which placed a new interpretation on certain past actions of the Department. The Board was asked whether they agreed with the Departmental procedure in these matters. The problem was thoroughly discussed and the conclusion was that the Board was not in a position to pass on

the legal arguments and should not involve itself therein. The Board felt it was desirable to make an affirmative statement that the legal aspects of the mining claim problem were not investigated and that we felt it would be presumptuous for us to do so when the matter was one for the normal administrative tribunals and courts to consider. On that basis there was no further discussion of the mining claim legal problems and none of us felt that the Department should be condemned or praised for its position on those matters, but that the due procedures should continue.

The second matter emphasized at Rifle was the conservation problem. There was extensive discussion on the need to recognize other values in the areas where oil shale was found. This was of deep concern to all and it appeared in our final report. "Conservation" was a goal with which none disagreed. The exact meaning of the word, however, may not have been the same to all. Because it might offer the greatest possibility of conserving the values other than oil shale, the Board gave a great deal of attention to the extractive process known as *in situ*. This involves retorting the shale in the ground and extracting the liquid at the surface. The problems of disposal of waste, the destruction of the landscape, the filling in of the valleys and all of the related aspects might be avoided by such a process. Two questions would require resolution, however. The first is the economics of the *in situ* process if it is found to be feasible. The second is whether the process would waste any substantial amount of the oil shale by leaving in the ground unrecovered shale oil. If the definition of the word "conservation" includes the avoidance of waste of oil shale itself, then the effort to conserve other values in the area might be outweighed by the need to conserve the oil shale from waste. We never did completely resolve this matter. The details of extraction were far beyond our capacity on the basis of the time and information and training available.

The efforts of every Board member to come to grips with the problem before us was interesting. Continually we by-passed the basic problems and tried to tackle details; continually we had to back up. The question of the method of extraction is one example; the details of leases that might be issued is another; the nature of the research and development that should take place was still another. Incidentally, the term "R & D," meaning research and development, is another example of the need for clear definition. Did the term apply to basic research alone or to applied research as well? Did it cover adopting a tested technique in one area to a new area with varying physical problems? The questions are infinite,

even definition may not have resolved them. Some felt "R & D" was a detail; others indicated it might be a goal. Elements of that crept over into our final report.

Another problem continually discussed was concern over whether the federal government should get the maximum return to which it was entitled from the oil shale reserves it owned. This led to one interesting concept of collecting all information that could possibly be obtained before any lease was issued. On this basis the Government could then proceed to issue a lease based upon a fixed number of barrels of oil to be recovered. It took quite a little discussion to get to the heart of this question. It was resolved by pointing out that since no known method of recovery provided 100 per cent efficiency, to issue a lease on the number of barrels would lead to high-grading of the deposit, to the leaving of large amounts of the resource in the ground, to the inability to recover the marginal deposits, and to the destruction of the incentive to the lessee to increase his efficiency and productivity with a resulting increase to the federal government of gross receipts from royalties due to a greater recovery of the resource. Perhaps this problem was adequately resolved. Some of us were never sure it had been settled.

The question of who should do research and development continued to flare as an issue throughout all the discussion up to and including the final draft. Some felt that the Government should conduct all the research with its own personnel. Others appeared to feel that it should be done under a Government contract with the results becoming part of the national property to be used by any group that obtained a lease. Others appeared to feel that the Government should concentrate on basic research and leave the applied research to the private segment of our economy. The confusion of terms is obvious. There were heated discussions about the overfocusing of research by having it controlled from one place as contrasted to the greater possibility of a breakthrough by letting everyone have a try by his own method. A tendency to overgeneralize appeared in some of the proposals. The overgeneralization consisted of assuming that all companies were equally advanced or retarded in their development of the art of extracting the oil shale product. Some wondered if those that are behind were not trying to get the resources retained in federal ownership until they could catch up. We never knew. Certainly an overgeneralization was not called for. The companies are not going to reveal their research secrets; those secrets are part of their assets. Companies may be reluctant to go into a research program where the results go out into the public domain and everyone can start at the same time.

They may be willing to cooperate on research but they would not like to be held back in its application until everyone else is equally ready.

The other overgeneralizations that crept in are illustrated by the continued emphasis of the Piceance Basin as though it were typical of all the oil shale reserves. This was not intended but the impression, nevertheless, prevailed. There was no true distinction between deposits that were shallow and deep; between those that are thick or thin; the beautiful areas and waste areas; the solidly blocked ownership patterns and the scattered patterns; the federally dominated areas and the fee or state dominated areas; the presence of water and numerous other matters infinite in their variety.

At this point it should be pointed out that the first preliminary draft of our report was dated November 11 and was received by the Board members prior to their holding the hearing in Washington for the presentation by non-federal parties. Some of us treated this as the format with which we would try to live; others thought that it was subject to a complete revision. At least two of us took the draft and interlineated our comments as a complete rewrite without changing the format. Others wrote complete revisions of portions as a suggestion. This was done after we had held our November-December meeting in Washington. At the January meeting it had become clear that we were not going to get a consensus. In order to complete the report our chairman, Joseph Fisher, had come up with the agreement that we would have a consensus and each would have a chance to make his pointed comments or exceptions to that in a footnote if he wished and also each would present his own personal views in a separate statement that would be attached *in toto*.

By the time the report came out it seemed to me that we had resolved two questions. First, there was no public interest that justified holding up an oil shale industry. As a consequence thereof there was no public interest that necessitated indefinite delay of lifting the withdrawal on the federal oil shale lands. The second conclusion was that there were definite public benefits to be achieved from opening the oil shale reserves. Specifically, a letter from the Assistant Secretary of the Navy presented to us by Captain Lovell stated that the Navy felt it was of extreme urgency to know whether oil shale could be developed for use as a reserve by the Navy in time of need. It was obvious that pure research was not enough and that applied research had to be perfected before that question could be answered. We had to have an active oil shale industry before we could know the answers. Apparently we had reached a pretty full agreement on those two points.

The question of method, however, was another problem. We clearly did not approve an uncontrolled release of the federal oil shale reserves; nor did the group approve a government-operated oil shale industry. Some commented that no one had ever proposed a government operation, but in the discussions the point was brought out that just before the 1920 period the Department of Navy had specifically proposed to work and operate the oil reserves at Elk Hills and Buena Vista, California, and Teapot Dome in Wyoming as a government operation. Some felt that there had been recent suggestions in Washington, based on the false premise that the federal government owned all the oil shale reserves, that there be a government corporation patterned after the Satellite Corporation to handle the oil shale reserves. These points are incidental but had to be faced in the process of our consideration.

The method to be used resolved on what was the optimum return to the public interest. Rather naturally this came down to dollars. How could the federal government get the maximum dollar return? The other side of that question is, how could private individuals be presented from unjust enrichment? We all had the same objective — get the optimum return to the nation — as the Government and as the landlord, both from rental and royalty revenue and from taxes. We shared a common belief that no special favorites should be benefited in the Government's administration of the oil shale reserves. This may have led some to the belief that the oil shale reserves could not be opened up because some might get special benefits. It led others to believe that only by opening them up on a competitive system could special benefits be denied. This deep concern for the propriety of the operation probably was the greatest problem we had to resolve. Our goals were identical, our proposals of method different.

A complete treatment of our problems which we discussed requires discussion of the ghost of Teapot Dome. This phantom appeared before, during, and after our deliberations. It probably will never entirely go away. It was used to justify government research and to justify "research and development" leases. It was used to justify issuing competitive leases and it was used to justify no leases. A few basic facts about the Teapot Dome controversy may help to bring the problem into perspective.³⁰

³⁰ Recommended reading on Teapot Dome is:

1. BATES, *THE ORIGIN OF TEAPOT DOME (PROGRESSIVES, PARTIES, AND PETROLEUM, 1909-1921)*, University of Illinois Press (1963).
2. NOGGLE, *OIL AND POLITICS IN THE 1920's: TEAPOT DOME*, Louisiana State University Press (1962).

The original controversy over the Naval oil shale reserves was not one of scandal but one over what legal rights, if any, the Honolulu Oil Company and others had in the oil reserves set aside for the Navy. The controversy turned on whether the Government could invalidate the rights these parties asserted under prior issued permits or whether those parties would be able to continue their operations. It is interesting to note that Honolulu Oil Company won that fight. The similarity with the present fight of oil shale mining claimants seeking patents and the position of the Government try to deny them is fascinating. As noted above the Advisory Board did not see fit to pass on the legal problems and yet the parallel with the early oil reserve problem of California is intriguing. It was not until a later period when the Secretary of Interior was accused of granting special favors to his friends on the Naval reserves that had been transferred to his administration that the term "Teapot Dome" became one of complete opprobrium. As time has passed the events of the two periods have become merged into one. Any discussion of opening up Naval reserves or of lifting the withdrawal on other oil shale lands brings back memories of a scandal and all phases of the controversy are blanketed thereunder. It is interesting to note that the scandals of the Teapot Dome period turn on the granting of favoritism for a few in the development of federally owned resources. The proposal of a method by which a few would be allowed to do research and then get a special grant based upon someone's approval of the results may come closer to the problems of Teapot Dome than would the opening of the lands to competitive leasing. Providence would have to protect the federal administrator who decided between two equally belligerent contestants for an oil shale lease on the basis of which the administrator preferred, rather than on some other more objective and less controversial test. At least to me, the taint of Teapot Dome and its application to the oil shale reserves of the Federal Government will best be laid to rest by opening all or part of the Federal oil shale lands to competitive leasing with performance requirements written in that eliminate those who cannot or will not develop the reserve. This does not mean that all should be opened at once but in my opinion some should be. To some the withholding of the federal oil shale reserves from development may be construed to be as great a granting of favors to those who wish to restrict competition in that field as would be the direct issuance of preference to such people. This dilemma is one common to public administrators. To my mind affirmative action is the only solution.

The avenues and by-ways that were explored by the board were

infinite. In the final comments, it is obvious that many were not explored by all together, but that some of the board brothers participating in the drafting were drawing on other sources of information. Certainly that was true in my case. Had the time been available to hammer out clean decisions on various factual questions, much of the apparent disagreement might have been eliminated. At our final meeting this was becoming quite apparent. It was not until that period that the board finally adopted and agreed upon a statement of goals and incorporated it in the draft which became the January 21st draft. Perhaps we should have fixed those goals in the beginning but that was not possible. In an effort to fix the points on which we had agreed, I undertook to prepare a statement of facts and to have them adopted by the board. On some we agreed; on some we did not. Consequently, we eliminated the entire list that I proposed. They are, however, of sufficient interest, at least to me, to set them forth as a footnote for consideration by any others who may in the future be delving into the oil shale problem.³¹

³¹ The proposals were:

1. Oil shale development is not presently a matter of major concern in the over-all national needs for energy.
2. Efforts to develop a viable oil shale industry as an alternate source of national energy supplies is in the national interest.
3. Immediate efforts to develop an oil shale industry do not pose a serious threat to that portion of our national economy represented by the oil industry and other industries supplying our energy requirements.
4. Parties interested in oil shale development are in various stages of progress toward commencement of a commercial oil shale industry.
5. The federal government controls some 75% of the total acreage and some 85% of the known reserves of oil shale. An additional 5% of both acreage and reserves may be controlled by the federal government depending on the outcome of pending controversy over the ownership of unpatented mining claims. The remaining ownership of acreage and reserves is in private ownership with some in the states of Wyoming and Utah in state ownership.
6. At least one company and perhaps others are proceeding to develop known oil shale reserves not in private ownership.
7. Withdrawing or maintaining the withdrawal of federal reserves from development will not necessarily prevent development of an oil shale industry by those able to acquire private and state lands.
8. Withholding the federal reserves from access creates a favored position for oil shale development in the hands of the relatively few holders of non-federal lands.
9. Numerous companies or groups of investors are demonstrating substantial interest and making major investments in efforts to develop an oil shale industry.
10. Withholding federal lands will not prevent such development, but will restrict competition and may reduce the probabilities of a breakthrough into successful and economically feasible development.
11. The federal oil shale reserves could be attractive for speculative investment, as contrasted to development investment.
12. The lands involved have values other than those for oil shale. Conservation standards for protection against waste of the oil shale resource itself, for the protection of surface, other mineral values, scenic values, and other values, and protection against pollution and other damages have not been established.
13. The federal government can act contractually to achieve such conservation standards as to federal lands but must cooperate with state and

VI. CONCLUSIONS

Having participated with my fellow board members physically, orally, and composition-wise, and having shared their deep interest in oil shale, their unflagging concern for the public interest, and the pressures and frustrations, I must state basic truth to you who may read these comments:

1. Secretary Udall refused to guide us to pre-determined conclusions. He invited and incited diverse opinions. He deliberately forced us to open any new problems we found necessary.

2. It is remarkable that as much was accomplished as was. The delineations of basic conflicting philosophies was an accomplishment. Reconciliation of them might have been possible with more time.

3. Had members of this Board been willing to lend their names to a staff study prepared for them, a less controversial report might have resulted. Not one would have done so, and Secretary Udall

local governments and private owners to achieve them as to the remaining area.

14. If federal government wholly or in part withholds access to the federally owner reserves for development, the federal government will not be participating in the development of conservation standards and inducements to orderly development that is in the best national, regional, and local interests.
15. The present stage of oil shale development indicates that continuing adjustment and improvement in the techniques of extraction and processing for the oil shale industry is needed to achieve and maintain an economically feasible place in the national energy picture for oil shale.
16. Development of standards for protection of values other than oil shale requires substantial cooperative effort by all segments of our society — federal, states, and private. The establishment of such standards that can be observed within economically feasible limits will have major effect on the development of an oil shale industry.
17. Other considerations, such as depletion and quotas and other factors will also affect the development of an oil shale industry. Such factors are believed to be beyond the scope of this board's mission.
18. The proceeds received by the federal government from its owned oil shale reserves are distributed under the terms of the Mineral Leasing Act of 1920 on the basis of 37½% to the state of origin, 52½% to the reclamation fund, and 10% to the General Fund in the U.S. Treasury. The large sums which may be received in the future, costs of administration and possible costs of protecting other public interests in the area without unduly burdening the oil shale industry with such public benefit expenses may require review of the propriety of the above distribution of receipts. Again, this is a problem noted for consideration, but one considered to be beyond the scope of this board's mission.
19. The current controversy over the ownership of unpatented mining claims creates a situation that allows neither federal nor private — and in some cases state — control of the controverted lands for purposes of development. Until such controversies are resolved the lack of necessary certainty of title in federal or non-federal ownership retards development.
20. The federal government is receiving no present income either in royalties, rentals, or as tax base from its oil shale reserves and has increasing continuing expenses in their management.
21. Withholding oil shale reserves from access or granting of access without making such access open to competition can be expected to evoke accusations of "favoritism" against responsible federal officials.

and Assistant Secretary Kelly were not parties to any pressures in that direction.

4. Joseph Fisher, in the unenviable job of chairman, did a tremendous job in gaining as much consensus as was obtained. Without his firm conference guidance and unflagging efforts to reduce our discussions to written form acceptable to us, there might have been no consensus report at all.

5. All of us, and probably the chairman most of all, would have welcomed several "head-knocking" sessions, beginning where we ended, to factor out facts and issues.

6. Such sessions could have hammered out "findings-of-fact" and "definitions." Such "definitions" clearly stated would have minimized differences arising from words apparently common but actually pregnant with different meaning to each of us. Such "findings-of-fact" would have restricted the reliance and emphasis by each of us on the beliefs and half-truths not agreed upon but drawn upon from the widely divergent backgrounds of the six board members. Without these common grounds of understanding and the limits fixed by them, no agreement could be reached.

7. No group could have been more unalterably dedicated to our national public interest, nor more concerned with an effort to be fair toward all segments of our society. We differed on methods, on some factual conclusions, on timetables of urgency — they were honest differences. No one could be more privileged than was I in testing my principles and beliefs against such fine minds, splendid gentlemen, and principled Americans. My appreciation of the need for and the importance of the democratic process is reaffirmed; my respect for those with whom I differ is enhanced; my desire to continue exploring those differences in search of fundamental truths is burning even more brightly.

8. But even had we been able to "head-knock" into a common recommendation, we still were only "Advisory." The burden of decision and the full responsibility rest directly on the Secretary of the Interior. His concerns are multitude, the pressures of a many-faceted public interest unending. As one of us six majority opinion writers said to Stewart Udall after the report had been made public: "Each of us had definite views on what you should do, but not one of us was certain that he would follow that advice were he sitting in your place."

Consistent with all those conclusions and specifically without necessarily dissenting from the last, my mind turns to an old and wise sailor's remark: "Even the best pilot and navigator can not

steer a drifting ship." My views in the separate "majority" opinion remain the same:

No proven public interest precludes development. There is a national urgency requiring that we commence. To wait too long may waste all or part of the vast oil shale reserve as its place in energy history is passed by and we go on to other energy sources. Ample precedents for protecting all aspects of public interest are available and workable. Failing to give private capital a chance to try is wasting three great resources: The ingenuity of private enterprise, revenue from rentals and from the tax base of new capital assets, and possibly the shale resource itself.

Development of a viable oil shale industry faces many problems. Until we face them, those problems will not be solved. Objections to every proposed solution will continue to proliferate. Positive losses from delay are far more damaging to our national interests than possible losses from mistakes in proceeding.

The Oil Shale Advisory Board had to stop before it finished. At least it found that opening federal oil shale reserves need not be detrimental to the national interests and that keeping them locked up may be.