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THE CONTROL OF MINERAL RESOURCES IN NEW MEXICO

A Thesis

Presented to

the Faculty of the Department of Government

The University of New Mexico

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Government

by

William Joseph Cunningham

June 1949

This thesis, directed and approved by the candidate's committee, has been accepted by the Graduate Committee of the University of New Mexico in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

Frank O. Lobaugh
DEAN

June 22 - 1949
DATE

THE CONTROL OF MINERAL RESOURCES
IN NEW MEXICO

BY

WILLIAM JOSEPH CUNNINGHAM

Thesis committee

Charles Judah
CHAIRMAN

Dorothy Woodward

N. Woldman

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INTRODUCTION

Theodore Roosevelt's Presidency is frequently termed as the dawn of the "conservation era" in the United States. It fostered the premise that society has an interest in the manner of exploitation of natural resources. In an age of highly developed technology the continuation of the presently realized level of material existence depends upon the wise production and use of natural resources.

Social interest in the conservation of mineral resources has been expressed by legislation of various forms and on the several levels of government. Pressure for the enactment of conservation laws and public administration of mineral resource exploitation has been met by counter-pressure from those vested interests who feel they stand to lose both power and economic advantage as a result of social control. Their stand is based upon the efficacy of "free enterprise" and "individualism" and the justicication of its application to the exploitation of mineral resources.

New Mexico is wealthy both in the variety and quality of her mineral resources. The market for these resources in the State is practically negligible. Numerous other regions of the United States are dependent upon New Mexico for the raw materials of technology. Thus, the mineral resource policies of the State are important not only to its own future, but to that of other regions, as well.

The subject of this study is the form, method, and philosophy of mineral resource control in New Mexico. It will be demonstrated that this control varies in techiques and objectives between the three principal mineral industries of metallics and nonOmetallics, potash, and petroleum.

In preparation for research into the problem of control some reading was done in the field of geology as it related to the minerals found in this State. Combined with this was a study of the history of New Mexico's mineral industry and the fluctuations in production figures of its mineral resources. The fruits of this phase of the research have been utilized where it is felt they will enhance the discussion.

Mineral resource control in New Mexico has not engaged the attention of many writers. Consequently, there is an appalling dearth of published or recorded information on the subject. This condition necessitated rather extensive field research. More than two dozen trips were made to Santa Fe on visits to the offices of the Public Land Commission, the Oil Conservation Commission, the State Corporation Commission, and the State Tax Commission. In addition a journey of two weeks duration was undertaken to Socorro, site of the New Mexico School of Mines and the State Bureau of Mines, Silver City, the principal city in New Mexico's metal mining region, Roswell, Artesia, and Hobbs, the major centers of the oil

producing region of New Mexico, and Carlsbad where the State's potash mines are located. The information gathered in this phase of the research formed the skeleton of the study of the problem.

In surveying the problem of oil conservation and its numerous and intricate involvements, the publications of the Interstate Oil Compact Commission in Oklahoma City were of exceptional value. Correspondence with leaders in the mineral industry and related professions resulted in filling many informational gaps.

There are many shortcomings in the study. Information gathered on control of the metals industry did not throw much light on the relationships of government and private enterprise in New Mexico. The chapter devoted to this portion of the study may be nothing more than an indication of those factors and forces which are not important to the stated problem. Possibly, the dynamics of governmental-industrial relationships in this field are principally active elsewhere than in New Mexico.

It is realized that the final evaluations are not of major proportions or significance. This is largely the result of the very practical problem of gathering the material which formed the foundation of the study and putting it into comprehensible form. A great amount of time was devoted to this task and it is hoped that the reader will find that it

has been satisfactorily utilized.

An attempt was made to survy some of the represntative readings in the field of economics and government regulation of private business activity. However, the exigencies of factual research militated against spending any large amount of time in that field of study.

Finally, it should be noted that not all of the mineral resources common to New Mexico are dealt with here. The State's mineral industry is both vast and varied. The limitations of time and the space that should be devoted to a prudently lengthy thesis required the exclusion of the greater number of the State's mineral industries. However, it is believed that the economically significant and trend-making industries have been included in the study.

The study is organized into ten chapters. The first is devoted to a short historical and production description of the mineral resource industry in New Mexico. This is followed by a survey of the major pressure groups surrounding the industry. Governmental-industrial relationships at the State level as they relate to the metallic and non-metallic mining industries is the subject of chapter three. The exploitation of potash and the regulation of that industry by the Federal Government is taken up in chapter four. Chapter five describes some of the problems of oil conservation. The sixth chapter relates the growth, history, and some of the

significant aspects of the Interstate Oil Compact Commission. The seventh and eigth chapters deal with the history and development of oil conservation of New Mexico. Some of the problems and recent developments in New Mexico is severance tax structure are discussed in chapter nine. Chapter ten is a discusion of some of the problems of government regulation and includes an attempt at adequate summation of the study.

CHAPTER I

A BRIEF SURVEY OF NEW MEXICO'S MINERAL INDUSTRY

In the foothills of the Black Range in southwestern New Mexico is Santa Rita, a drab mining town on the lip of a yawning pit, the cradle of New Mexico's modern era of mining. A mountain stood on this spot a few centuries ago. Copper had been taken from its sides by the Indians and fashioned into utensils to serve their needs. In 1804 extraction of the mineral began on a large scale amounting to about four million pounds annually. It was carried over land by muleback to Mexico City.

Within the next hundred years other valuable ores, lead, zinc, gold, and silver were discovered beneath the soil of this region and in its outcroppings of rock and stone. During the greater part of the Nineteenth Century the latter two of these minerals received greater attention and were more sought after. But by 1900, the advance of the Industrial Revolution had invoked a greater demand for the base metals and stimulated activity toward their exploitation to a vastly larger degree.[1] Large mining concerns were attracted to the State and production rose steadily in the years prior to 1914. With the beginning of the First World War it took a prodigious upswing and in 1917 a record figure was set for tonnage of copper taken

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[1] S. G. Lasky and T. P. Wooton, The Metal Resources of New Mexico (Socorro: State Bureau of Mines and Mineral Resources, 1933), pp. 15-21.

from the earth.[2] It was not equalled until World War II.[3] In the intervening years a declining market drove production to one eighth of its previous peak. It rose slowly from this low, experienced a new setback in 1930 when the Santa Rita mine closed for three months, remained at a low level until 1936 when a new recovery in the market induced a rise.[4] During the Second World War much of the metal mining in New Mexico operated on a marginal basis under government subsidy.

The greater part of New Mexico's metal mining activity is concentrated in Grant, Sierra, and Socorro Counties with the major portion of the industry located in the first of these. Among the leading exploiters are American Smelting and Refining Company, Empire Zinc Company, Kennecott Copper Corporation, Peru Mining Company, Phelps Dodge Corporation, and United States Smelting, Refining, and Mining Company.[5] With the exception of Peru Mining Company, each of these concerns operates a processing plant in addition to its mines. The Kennecott Copper Corporation

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[2] Ibid., p. 130.

[3] T. D. Benjovsky, Contributions of New Mexico's Mineral Industry to World War II((Socorro: State Bureau of Mines and Mineral Resources, 1947), p. 27.

[4] Lasky and Wooton, op. cit., pp. 131-132.

[5] Interview with Jack C. Pierce, Secretary, New Mexico Miners and Prospectors Association, October, 1948.

copper-molybdenum precipitation plant at Hurley has a capacity of 25,000 tons of raw mineral daily while that of each of the others ranges from 300 to 450 tons.

Traditionally, copper has been New Mexico's leading metal product since the turn of the Century. In the fiscal year 1948 70,402 tons valued at $29,875,899 were placed on the market. Zinc production totaled 106,223 tons worth $8,880,820 while lead mined equalled 27,993 tons which returned $2,273,684.[6] This represented $41,030,403 of a total metals production valuation of $42,350,200 for the fiscal year.[7]

Another important mineral product is potash produced by three companies, International Minerals and Chemicals Corporation, Potash Company of America, and United States Potash Company operating in Eddy County about fifteen miles northeast of Carlsbad. This is by far the most important of all non-metals mined in New Mexico accounting for $42,738,880 of the $50,343,229 worth of minerals in that class produced in the fiscal year 1948. In terms of volume, production for the year totaled 4,846,319 tons. Coal, the other economically important non-metal, accounted for

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[6] E. C. Anderson, Annual Report 3 (Socorro: State Bureau of Mines and Mineral Resources, 1948), p. 44.

[7] See Table I.

TABLE I

TONNAGE AND VALUE OF PRODUCTION OF PRINCIPAL METALS

IN NEW MEXICO DURING FISCAL 1948

	TONNAGE	VALUE
Copper	70,402	$29,875,899.00
Lead	27,993	2,273,684.00
Zinc	106,223	8,880,820.00

$6,712,043 of the total non-metals production for the same period and amounted to 1,416,099 tons mined.[8] The principal area of exploitation of this mineral is in Colfax County near Raton and is carried on by Phelps Dodge Corporation and St. Louis, Rocky Mountain, and Pacific Company. New Mexico's coal deposits are almost completely bituminous and stretch in a broad crescent from Socorro County through McKinley, San Juan, Sandoval, Rio Arriba, Santa Fe, and Colfax Counties.

In terms of value of production oil is the most important resource now developed in New Mexico. In the fiscal year 1947 41,751,403 barrels of this resource, with a market value of $71,701,790 were produced in the State.[9] The principal site of petroleum exploitation is in Lea County where nearly thirty-six million barrels of the State total were produced during the fiscal year.[10]

Lea County is also the location of practically all natural gas produced in New Mexico. Of the 153,153,345,000 cubic feet of this resource taken from the ground in the fiscal year of 1947, 143,912,478,000 cubic feet came from

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8 Ibid., pp. 44-45.

9 Seventeenth Biennial Report of the State Tax Commission of New Mexico (Santa Fe: New Mexico State Tax Commission, 1949), pp. 111-113.

10 Ibid., p. 112.

Lea County. Most of the rest of the State's production is located in San Juan County where slightly more than nine billion cubic feet were produced during the same period. The total market value of production of natural gas in New Mexico for that year was $3,528,630.[11] Both exploration and exploitation are now advancing in San Juan County at a rapid rate and this locale may shortly become the leading center of natural gas production in New Mexico. The region is believed to be the site of one of the largest natural gas fields in the United States. Proved reserves in this area total approximately one and one half trillion cubic feet and estimates of total possible reserves run as high as three trillion cubic feet.

The National Oil Scouts and Landsmen's Association lists twenty-five oil companies operating in New Mexico as major producers. These are Amerada Petroleum Corporation, American Republics Corporation, Atlantic Refining Company, Byrd Frost, Cities Service Company, Continental Oil Company, Gulf Oil Corporation, Humble Oil and Refining Company, Kerr-McGee, Magnolia Petroleum Company, Malco Refineries, Incorporated, Mid-Continent Petroleum Company, Ohio Oil Company, Phillips Petroleum Company, Pure Oil Company, Richfield Oil Company, Shell Union Company, Sinclair Prairie Oil Company,

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[11] Ibid., pp. 111-113.

Skelly Oil Company, Standard Oil Company of Texas, Stanolind Oil and Gas Company, Texas Company, Texas Pacific Coal and Oil Company, Tide Water Associated Oil Company, and Union Oil Company of California.[12] In addition to these companies there are numerous smaller companies and a host of independent producers operating in the oil fields. Natural gas is produced almost completely by small operators in New Mexico but nearly all of it is distributed either by the Southern Union Production Company or the El Paso Natural Gas Company.

By comparison with the rest of the states New Mexico's mineral production rankings are as follows: first in potash and possibly pumice, second in zinc and tin, third in molybdenum and vanadium, essential elements of high grade steel, fourth in copper, flourspar, beryllium and lithium, sixth in coal, and seventh in oil and lead.[13]

During the first half of 1947 11,223 persons were employed by New Mexico's mining industry. Of these, 5,000 were on the payrolls of the petroleum industry, 1,799 in mineral processing plants and smelters, and the rest in

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[12] Hugh J. Roberts, editor, Oil and Gas Development in the United States (Austin, Texas: National Oil Scouts and Landsmen's Association, 1947), XVII, p. 396.

[13] Jack C. Pierce, "Fifty Years of Mining in New Mexico," 1947 Mining Yearbook (Denver, Colorado: Colorado Mining Association, 1948), pp. 157-162.

the mines.[14]

Five oil refineries are located in New Mexico and during 1947 processed 3,427,418 barrels of crude petroleum. Two are at Artesia, owned by Continental Oil Company and New Mexico Asphalt and Refining Company, one each at Farmington, also owned by Continental Oil Company, Monument, Warren Petroleum Corporation, Prewitt, Petroleum Products Refining and Producing Company, and Roswell, Malco Refineries, Incorporated. Other major above-ground facilities in the State's mineral industry are the three potash mills and refineries, each capable of processing 4,500 tons of raw ore daily, located at the mines near Carlsbad.[15]

The above material provides but the barest description of New Mexico's mineral industry and serves merely to indicate the position of the State with regard to the total economic region of the mineral interests. For this reason descriptions of most of the above-mentioned concerns are contained in the Appendix for the further information of the reader. On the basis of the whole of this material it

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[14] Dexter H. Reynolds, Resources of New Mexico (Albuquerque: Division of Research and Development, University of New Mexico, 1947), p. 2.

[15] Sterling P. Talmadge and Thomas P. Wooton, The Non-Metallic Mineral Resources of New Mexico and Their Economic Features (Socorro: State Bureau of Mines and Mineral Resources, 1937), pp. 120-130.

is accurate to describe New Mexico as a colony. It benefits only to the smallest degree from its wealth of natural resources reaping only the revenue of taxation and the support of small communities drawn to the mineral centers by the development taking place there. Only a very minor portion of New Mexico's natural resources remain within her borders from the time they are taken from the ground until they are consumed. The State will remain in this posture until manufacturing utilizing its mineral wealth is developed here.

CHAPTER II

THE PROMINENT PRESSURE GROUPS

EFFICIENCY
EZERASE BOND
RAG CONTENT

From time to time the competitive American free enterprise system finds that it must weld its individualists into a unified force for the defense of the common interest. The increased frequency of those situations which require the marshalling of capitalism's generally heterogeneous components have given rise to the institution of a permanent watchdog or trade association.

New Mexico has four principal interest groups of this type either wholly or partly representing its mining and petroleum industries. These are the New Mexico Miners and Prospectors Association, the New Mexico Oil and Gas Association, the Lea County Operators Committee and the New Mexico Taxpayers Association.

The same manner of organization exists on the national level as well and concerns itself with the problems and issues arising in that arena. The American Petroleum Institute is an excellent example.

Oldest of the interest groups in New Mexico is the New Mexico State Taxpayers' Association first formed in 1914. It remained in existence for nearly a year, lapsed in 1915, was revived in 1916 and has flourished since. The events surrounding its early years bear the stamp of the Santa Fe Railroad, at the time a substantial landholder in the State. It was another link in the protective chain forged by the Santa Fe along its right of way.

The basic philosophy of the Association, according to Albert K. Nohl, its director of research is to oppose "all new or increased taxes if the need for them cannot be definitely proved." In past years it closely scrutinized the expenditure of State funds to insure that the taxpayer's dollar was spent in a manner not inconsistent with the law. During those years most of the Association's time was spent in the courts fighting out cases on this issue.

Aside from performing these functions, the organization provides no great special service to the mining industry except assembling information on taxation for that group when the issue comes to the fore. At the session of the Nineteenth Legislature in 1949 when an increase in severance taxes was sought the Association furnished industry's representatives with a single typewritten sheet of information summarizing severance tax schedules in existence at the time, tax collections for the two previous fiscal years, the earmarking of this revenue, a comparison of the schedule with that of selected other states, and a summary of all tax schedules affecting the mining industry.[1]

In line with its traditional policy, Rupert F.

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[1] Interview with Albert K. Nohl, February, 1949.

Asplund, the Association's secretary, issued a statement to the press on March 4, declaring that in his opinion revenue collections for the current fiscal year indicated that sufficient funds would be available to meet the budget then under consideration by the Legislature. No increase in the severance tax was necessary, he concluded.[2]

The mining industry views the activities and work of the Association with distinct favor. The metal interests particularly consider it equally as valuable and important to them as the New Mexico Miners and Prospectors Association.[3] Since membership dues are levied at the rate of one half of one percent of the property tax paid to the state, the larger corporations and property holders contribute substantially to its support.

The New Mexico Miners and Prospectors Association which was founded at Silver City on January 28, 1939 is the mining industry's principal watchdog. Its stated basic aim is "To promote the general welfare of the mining industry in New Mexico." To accomplish this purpose it set forth a comprehensive ten-point program. Some of its main features

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[2] The Albuquerque (New Mexico) Tribune, March 4, 1949.

[3] Interview with S. S. Hewitt, Acting Superintendent, Hanover Mine, Empire Zinc Company, Hanover, New Mexico, December 3, 1948.

are:

> Forming an association...(which will acquaint)... various groups of citizens with conditions which foster the mining industry as well as hamper it. The establishment of a publicity...campaign which will...result in the people of the state becoming mining-minded. The examination of all Federal and state legislation, past and proposed, that has to do with the mining industry. Maintaining careful watch over arbitrary rulings of Federal as well as State bureaus. Careful consideration of all conditions which may arise and affect the mining industry.

Promoted by parties and meetings keynoted upon conviviality, the organization experienced a rapid growth in its infancy. Originally its membership included the mine workers and its ranks were swelled to an impressive size. However, shortly after the Association's pretentious birth differences of opinion over labor-management policy arose in Grant County and ultimately reached such a peak of unreconcilability that it occasioned the departure of the entire labor wing.

During the Second World War the membership of the Association remained stabilized at approximately 300. Since 1946 it has climbed to slightly over 1,000 and has set a goal of 2,000 for 1949.[4]

By contrast with those of other states, New Mexico's Association is characterized by a proportionally greater

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[4] Correspendence and Interview with Jack C. Pierce, Secretary, New Mexico Miners and Prospectors Association, Albuquerque, N.M., October, 1948 and January, 1949.

representation from the larger mining interests in the State. In some respects, the characteristics of mining in New Mexico have resulted in this situation. Elsewhere, notably Colorado, the great bulk of the membership is composed of numerous small operators and prospectors formed into a number of local chapters.

In its original policy statement the Association declared that it was to be a "Common meeting ground for the prospector, miner, merchant, professional man, banker, and business man." It has failed to develop, thus far, into such a diversified body and now includes only persons with a direct interest in the industry. The reasons for its failure to develop in the original design are, perhaps, either the lack of a common interest or a concern that so heterogeneous an organization would prove unweildy in the formation of policy. The latter would seem the more likely of the two conclusions to draw on the basis of a communication from the organization stating that the expected results of its current intensified program of recruitment and consolidation...

> ...are increased membership which leads to our Association being more truly representative of the entire industry, a more thorough understanding of the thinking and needs of all components of our industry so that the Association can better serve all components through its facilities and a means of maintaining a vehicle for quick mobilization when action is needed.

The Association's prominent members differ as to its chief value. Generally, they fall into two groups. G. J. Ballmer, Mine Superintendent of the Chino Operation of Kennecott Copper Corporation at Santa Rita, emphasizes a strictly intra-industry aspect, the exchange of information. The various chapters, he points out, hold regular meetings at which papers are presented on mining problems and movies dealing with related subjects are displayed. This is also a feature of the organization's annual conventions.

On the other hand, Acting Superintendent S. S. Hewitt of the Empire Zinc Company's mine at Hanover, indicated that NMMPA is regarded by a large segment of its membership as both a rallying point against the encroachment of government and an amalgamation of the industry's collective interests. He cited the heated dispute over the proposed extension of the White Sands Proving Ground as a prime example of this function. NMMPA has been in the forefront of the opposition to this move since its origins.

The Miners and Prospectors Association also took note of the debate on the severance tax increase ultimately enacted by the Nineteenth Legislature. Jack C. Pierce, secretary of the organization, stated that the membership would adhere to a stand of strict opposition "until it is shown that revenue obtained from the increase is needed."

He contended that the measure would discourage incentive toward greater development especially on the part of the smaller operators.[5]

Central office of the Association is located in Albuquerque where a library and assay equipment adequate to the identification and analysis of mineral samples are maintained. It publishes a monthly journal, the New Mexico Miner and Prospector, now is its eleventh year, and employs a secretary-treasurer and his assistant on a full-time basis. Dues of the organization are two dollars per year.[6,7]

Paralleling the Miners and Prospectors Association is the petroleum industry's New Mexico Oil and Gas Association, older by more than a decade. Its basic philosophy is much the same.

It was formed in 1928, as New Mexico's oil industry was emerging from an embryonic state, and originally named the New Mexico Oilmen's Protective Association. It carried this title for a period of about five years. One of its founding fathers was Harry Leonard, Roswell, now president of the Leonard Oil Company, one of the many independent operators in southeastern New Mexico. He says that there

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[5] Albuquerque (New Mexico) Journal, February 6, 1949.

[6] Pierce, op. cit.

[7] A well-informed and thoroughly reliable source in Silver City says that Kennecott Copper Corporation is reported to underwrite the bulk of NMMPA's expenses.

were no particularly important or crucial events acting as major stimuli toward its establishment. He regards it as more of a trade association, in the traditional sense, than anything else.

However, both Mr. Leonard and the Association's secretary, Arthur R. MacQuiddy state that one of its major functions is to operate as a watchdog of the industry on both the State Legislature and Administration. Mr. MacQuiddy characterized this as defense of the industry from increased State taxation or control. As subsidiary functions he listed public relations for the industry and maintaining an internal channel for the easy flow of information on the nature and importance of mutual problems.

The Association's membership is almost 100 percent representative of the State's entire petroleum industry. It utilizes two methods to maintain harmony among the large and small operators whose interests are not always parallel. The major producers supply the bulk of the funds required for the operation of the organization while the small operators hold a sizable majority of the seats on its board of directors. The organization confines its activities to the State and the common problems of the industry within this province, but it makes no attempt to influence the State's policy on exploitation. This latter function is

left to the Lea County Operators Committee, a separate group. The Association as a whole is integrated into the Rocky Mountain Oil and Gas Association, one of the several regional industry organs in the United States, and has an indirect affiliation with the American Petroleum Institute.[8]

During the session of the Nineteenth Legislature, Mr. MacQuiddy was one of the most active and publicized lobbyists in Santa Fe on the issue of the increased severance tax. The proposal was only a few days old in late January when he presented an assortment of statistics calculated to demonstrate the undesirability of the increase from the viewpoint of the petroleum industry and contrasting the tax structure of New Mexico with those of other states.[9] The succeeding two months saw further statements in the same vein and equally as detailed presented to the lawmakers.[10]

New Mexico's other major petroleum interest group is the Lea County Operators Committee which is in the unique position of acting as an agent of the State Administration.

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[8] Interviews with Harry Leonard and Arthur R. MacQuiddy, Roswell, December 6, 1948.

[9] Albuquerque (New Mexico) Journal, January 30, 1949.

[10] Albuquerque (New Mexico) Journal, February 16, 1949, and The Albuquerque (New Mexico) Tribune, March 1, 1949.

Its development and functions are bound up so closely with the history of New Mexico's oil industry and the growth of its oil conservation policy that the group cannot be adequately discussed here. Chapters VII and VIII deal with the activities and significance of this organization.

The oil industry's watchdog on the national level is the American Petroleum Institute. Headquarters of the Institute is in New York City, but it is incorporated under the laws of Washington, D.C. as a trade organization. Membership in the Institute is on an individual basis and applicants are elected to the organization if they meet the basic requirements of being residents of the United States, Canada, or Mexico, are twenty-one years of age or older, are of high character and good standing, and have a direct interest in the petroleum or allied industries. The objectives of the organization are set forth as follows:

1. To afford a means of cooperation with the government in all matters of national concern.

2. To foster foreign and domestic trade in American petroleum products.

3. To promote, in general, the interests of the petroleum industry in all its branches.

4. To promote the mutual improvement of its members and the study of the arts and sciences connected with the petroleum industry.

The Institute has four divisions, three departments, a board of directors of 112 members and a thirty-man

Executive Committee. The Division of Refining, the Departments of Information, Statistics, and Safety, and the American Petroleum Industries Committee are all located in New York. The Division of Production has its main offices in Dallas, Texas, while the Divisions of Marketing and Transportation are headquartered in Washington, D.C.

The Board of Directors and the Executive Committee are the policy making bodies and membership is honorary. The directors are elected for one and two year terms while the executive committee is composed of the organization's six elected officers and twenty-four additional members elected from the Board of Directors. Officers are elected annually by the Board of Directors and fill the positions of President, one vice-president for each of the divisions, treasurer, and secretary and assistant treasurer. The vice-presidents are honorary members of the staff and unpaid.

Meetings of the divisions of the Institute are usually held annually at mid-year. A general meeting of the membership is held annually, usually in the fall, for purposes of policy making.

The Institute's Year Book for 1947 indicates that its activities

> Enter the fields of standardization, design, care, and good practice in the use of equipment; fundamental and technical research; accident and fire prevention; waste disposal; testing methods and

> specifications; prevention of corrosion; collection and dissemination of petroleum information; pipeline, highway, waterway, and railway transportation; petroleum statistics; public relations; measuring; sampling; testing; education; economics; metallurgy; accounting; nomenclature; engineering; taxation and legislation.

These latter two activities are the particular province of the American Petroleum Industries Committee.

The statement continues,

> The work of the Institute is conducted by the divisions and departments, in cooperation with experts in various phases of petroleum industry activity who contribute their services. To facilitate and to coordinate the activities, standing and temporary committees are organized. Thousands of oil men now are members of Institute committees, and are contributing of their time and talents to promote the general welfare of the industry.[11]

Other interest groups of a less formalized and more transitory nature arise in behalf of the mineral industry when matters of a greater vital concern come to the fore. The convening of a session of the Legislature is usually the occasion of their emergence from a biennium of hibernation. Normally they do not operate in what little glare of publicity is focused upon the proceedings of the law-making body by the press delegation. Their seats are upon the steps of the State Capitol, in the more placid of Santa

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[11] Petroleum Facts and Figures, Eighth Yearbook of the American Petroleum Institute (New York, New York: The American Petroleum Institute, 1947), pp. 222-227.

Fe's bars, the cafes whose chefs and fare are of local repute and fame, or amidst whatever other surroundings, smoke-filled or ozone-charged, might render the legislative will more malleable. In some cases of good fortune, the camel's nose is within the lawmaking tent. Carlsbad's two representatives in the Nineteenth Legislature, Frank A. Alford and Virgil O. MCollum, are employees of one of Eddy County's three potash companies.[12]

During the session of the Nineteenth Legislature, the potash lobby drew the special wrath of Governor Thomas J. Mabry. A letter from the chairman of the House Appropriations Committee, Rep. M. P. Carr (D.), Fort Sumner, to Governor Mabry precipitated a reply from the Chief Executive assailing the "Open and notorious lobbies which the potash industry has maintained here during the present session of the legislature." He termed it one of the most active and persistent he had seen in forty years of public service. The charge drew a reply from the President of the Potash Company of America, G. F. Cooper, stating that, "Certainly the potash industry has its representatives in Santa Fe, just as every other industry has, and we feel that we have a perfect right to do so. It is perfectly legitimate business." But this was the extent of the merciless probing

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[12] Editorial in The Albuquerque (New Mexico) Journal, February 19, 1949.

of the Fourth Estate into the activities of the "open and notorious" lobbies. Subsequently they were left to nurse what wounds they might have suffered and pursue their bartering and persuading in the solitude of anonymity.[13]

The Governor's broadside was not altogether a barren venture. The following day the House passed a Senate measure providing for the regulation of lobbies after bolstering it with amendments categorizing practically all types of this group. It was a particularly significant move since the House had earlier in the session voted down an identical measure of its own.[14]

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[13] The Albuquerque (New Mexico) Tribune, March 10, 1949 and The Albuquerque (New Mexico) Journal, March 11, 1949.

[14] The Albuquerque (New Mexico) Journal, March 11, 1949.

CHAPTER III

GOVERNMENTAL-INDUSTRIAL RELATIONSHIPS IN METALLIC AND NON-METALLIC MINERAL EXPLOITATION (EXCLUSIVE OF POTASH AND PETROLEUM)

When he ran for Congress in 1948 former Governor and then State Land Commissioner John E. Miles stumped the State with heavy emphasis upon the issue of the public lands. He promised to introduce a bill in the United States Congress which would provide for the "return" of the public domain to the ownership of New Mexico. The attitude of the Public Land Commission was summarized late in October by their attorney George Graham stating that it was felt the State should be receiving all the royalties from these lands.[1] This stand was based upon the contention that New Mexico is a poor state and could make good use of revenue derived from the exploitation of its natural resources.[2] It was also mentioned by Mr. Graham that, generally speaking, State regulation of mineral and petroleum lands is more reasonable than that of the Federal government. The inference intended apparently was that the mining interests would rather be placed under the authority of the State than that of the Federal government.

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[1] The present arrangement returns 37.5 percent to the State for educational purposes with 52.5 percent transferred to use in soil conservation and reclamation. The Federal government retains only the remaining 10 percent. The situation is the same on all other Federal mineral lands in the country.

[2] Interview with George Graham, Assistant Attorney General for the Public Land Commission of New Mexico, Santa Fe, New Mexico, October 26, 1948.

Therefore, it seemed the position of industry on the issue would be a useful yardstick for the measurement of some aspects of the relationships between the State and the mining interests. Interrogation on the point at mining centers throughout the State developed some answers at variance and others in concurrence with the attitude of the Public Land Commission.

In the region surrounding Silver City, the metal mining capital of the State, the attitude of local leaders in the mining industry is one of opposition to the State administration. Undertones of this theme ran through all interviews with these people, although it sometimes took the form of a relatively greater feeling of cordiality for the Federal government.

The most concise and blunt expression of this opinion came from G. J. Ballmer, mine superintendent for Kennecott Copper Corporation on the Santa Rita Division of their Chino Project. He firmly stated that return of the Federal lands to the administration of the State would operate to the detriment of the mining industry in New Mexico. The key to this situation, he said, is that the State is interested chiefly in deriving revenue from its mineral lands while the Federal government seeks the fullest possible development of the resources under its surveillance.

The result, said Mr. Ballmer, is that the State imposes levies upon every phase of the operation, in some cases prior to the development of the resource. Consequently, it becomes nearly impossible for the small, independent prospector to stake out and operate a claim. He added that this situation was "getting away from the old idea of prospecting...that what a man finds is his own and he has a perfect right to work it and do with it what he wants." Whether or not this represents the position of the Kennecott Copper Corporation remains a moot point.[3]

Ballmer's viewpoint harks back to that put forth by Fowler and Talmadge[4] that the "mineral claimant is...a speculator turning to his own account that which the government has offered in gratuity." They contend that he differs from the homesteader by the fact that he is not a home builder, adding that the mineral claimant "cannot do less than comply with the conditions on which the gift is offered." The basic conditions upon which mineral claims are entered are little more than procedural and have been settled for several decades.

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[3] Interview with G. J. Ballmer, Mine Superintendent, Santa Rita Division, Chino Project, Kennecott Copper Corporation, Santa Rita, N.M., December 4, 1948.

[4] Charles H. Fowler and Sterling B. Talmadge, Mining, Oil and Mineral Laws of New Mexico (Socorro: State Bureau of Mines and Mineral Resources, 1941), p. 16.

Although this is generally the form of government-industrial relationships in the fields of metal and, with the exception of potash, non-metal mining, there is an area of conflict between both institutions. The dynamic interplay, periodically loosed, is over the question of taxation, but it is a matter more suitable for separate treatment and is discussed in Chapter X. Only the preliminary spadework necessary to its understanding is considered here.

The lack of imagination of the State in its regulations for claim development is an added sore spot of the miners. Situations frequently arise, said Mr. Ballmer, under which a claimant may hold several adjacent claims. If they are on State land, the State requires that development work to a specified minimum be done on each of them annually. Under the same conditions the Federal government will permit the investment to be lumped into a development project on a claim chosen at the discretion of the exploiter. A sizeable and worthwhile investment results if the claim is of worth, at the same expense as would be incurred on State land and within the same period, Mr. Ballmer concluded. This, he contended, demonstrates clearly the difference in attitude between the State and Federal governments with regard to exploitation on their lands.

However, these are the only requirements to be met by a person or concern desiring to develop a mineral body.

Aside from defining a procedure to be followed in laying claim to the property within which the ore is located and specifying a certain amount of development work to be done annually the Federal government exercises no further control and the only additional control exercised by the State is through its mine safety code. It amounts to little more regulation of the metal mining industry in New Mexico than there is of any other business in the opinion of most mine superintendents and prospectors interviewed. By way of summarization, Mr. Ballmer said, "We leave the state pretty much alone, except for the tax question, and they leave us alone."

In passing, notice should be taken of the unique land situation in New Mexico which is, if not the most, then certainly one of the more complicated patterns of ownership in the United States. Its effect is to increase the complexity of administration of mineral law from the viewpoint of the exploiter since he is frequently required to deal with several agencies or groups, federal, state, or private, in the course of exploration and development. Surface rights in some cases may be owned by one party and mineral, or subsurface, by another. The situation is not limited to metal lands solely, but the nature of metal deposits with a given ore body existing in a relatively concentrated limited area, gives rise to a variation of circumstances between mines,

workings, or claims. Fowler and Talmadge[5] subdivide land classification for the purpose of demonstrating the application of mining laws as follows:

I. Government lands

1. Public domain

2. Land used for special or governmental purposes
   (a) Federal building sites, post offices, etc.
   (b) National parks
   (c) Military, hospital, or other special purpose reservations
   (d) Indian reservations
   (e) National forests
   (f) Lands withdrawn by executive order

II. State lands

1. Public lands
   (a) School lands
   (b) Institutional lands
   (c) Other grant lands

2. Lands used for special or governmental purposes

III. Privately owned lands

1. Lands owned by individuals

2. Railroad grant lands
   (a) Patented lands
   (b) Unpatented lands within the grant
   (c) Lieu lands

3. Spanish and Mexican grant lands

4. Lands in which mineral is reserved

The Federal mining code is supreme on lands in the public domain or otherwise under the jurisdiction of the

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[5] Ibid., pp. 10-11.

Federal government. State laws may supplement the Federal code, but those provisions which are in conflict with it must give way.[6] Leasing of State-owned land is administered by the Public Land Office headed by the Commissioner of Public Lands with offices in Santa Fe. The Bureau of Land Management, with district offices at Las Cruces, New Mexico, performs the same function for the Federal government.

The office of the State Inspector of Mines supervising administration of the State Mine Safety Code was established by act of the Legislature in 1933. The Inspector is appointed by the Governor, with Senate approval, and upon the recommendation of a board of examiners composed of the Governor, the president of the School of Mines, and the State Engineer. Applicants are required to have at least ten years of experience as employees in mines in the United States including five years in coal mines in New Mexico. They must be at least thirty years old and "have a practical knowledge of mining engineering." There are no educational requirements.[7]

At present the State Inspector of Mines, John A. Garcia, says that his staff consists of two assistants. One of these is permanently located at Silver City and oversees operations in that area. The other is located at the main office in

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[6] Ibid., p. 13.

[7] Ibid., p. 99.

Albuquerque. He has no stenographers, clerks, or office personnel of any type in either of the two offices. His budget makes no provision for it and the Legislature has failed to act on requests for authorizations and funds for increased facilities. Garcia and his assistant, Angelo Pais, attempt to arrange their field inspection trips so that the Albuquerque office is open at all times, but inevitably there are difficulties in this procedure and often it is unworkable.

The mining industry in New Mexico is now at an all time high for value of production, says Mr. Garcia, but the Mine Inspector's office is no larger than it was in prewar days. Since it is his policy to inspect coal mines quarterly and all other mines twice annually, Garcia and his staff are sorely taxed to fulfill their duties.

The handicap of a small staff has in some measure been overcome by close cooperation with the inspectors of the Federal Bureau of Mines. These inspectors must have the authorization of the State Inspector of Mines to enter all other than coal mines in the State as well as the permission of the owners themselves. Mr. Garcia welcomes their inspections and has made a practice of requesting them to notify him immediately at his expense upon discovery of an unsafe condition in a mine. He has also encouraged the mine employees to call to his attention unsafe conditions in

the mines. Upon receipt of such reports an immediate examination is made by the inspector or a member of his staff and appropriate action taken.

Mines can be closed only through the police power of the state. Neither the Federal Bureau of Mines nor the Conservation Branch of the United States Geological Survey, which in New Mexico supervises for the Federal government the operation of the potash mines, has the authority to discontinue the operation of any mine located in the State. The authority of the State Inspector of Mines does not extend to the inspection of petroleum operations.

Upon the occurrence of a fatality in any mine in the State, the inspector orders the mine to be closed immediately and proceeds to the scene of the accident. He must hold a hearing to determine cause of and responsibility for the accident. The mine is also inspected and is not permitted to reopen until the impediments to safe operation have been removed.

Notice of routine inspections must be posted at the mine by the Inspector following his tour. These usually list deficiencies found in the operation and steps which must be taken to correct them and set a time limit for carrying out the necessary measures. A follow-up inspection is held at the close of this period of grace to determine whether the required corrective steps have been taken.

In describing the close liaison maintained with the Federal Bureau of Mines, Mr. Garcia pointed out that such harmony between the state and federal agencies does not exist in many other states, especially those where mining is a comparatively large industry. There is no jealousy here and he holds the Federal mine inspectors in the highest regard.

An attempt is made to strike the keynote of cooperation in dealing with mine operators as well. During previous administrations some operators, particularly the smaller, mined ore in a manner which was in violation of the State safety code. In many cases the State Inspector of Mines knew this, but took no action. Mr. Garcia's job has been to get these operations back on a legal basis, and to accomplish this he has taken the pains to devote much time to reviewing points of dispute with the operators involved. The effort is, in great part, directed as much to education as control. The response has been highly favorable and use of the police power has not been necessary. Such solicitude is not usually required of the major mining concerns, and Mr. Garcia says they are always ready to offer immediate and complete cooperation.

But inspecting mines is a tough job. "Mining is a continuing process and conditions are always changing. I might declare a mine safe and fifteen minutes after my

inspection it might be unsafe," commented Mr. Garcia. Consequently, the Mine Inspector's office attempts to offset the possibility of a serious accident in the mines by conducting courses in mine rescue methods and the use of attendant apparatus as well as instruction in first aid methods. His program has also struck a snag. Union chiefs have demanded that the mining companies pay the miners for time spent in receiving such instruction since it is usually carried on during working hours. Difficulty has also been encountered by Federal Bureau of Mines' instructors attempting to conduct such courses. No satisfactory and uniform agreement has been reached in solving the problem.

The State Inspector of Mines heads up an independent agency reporting directly to the Governor, but the handicap of a limited budget has forced an informal affiliation with the State Bureau of Mines and Mineral Resources, a Department of the School of Mines whose main offices are in Socorro. The office's fiscal and statistical work is handled largely by the Bureau of Mines and all printing is channelled through that agency. Previously another agency of the State with main offices in Santa Fe handled these matters for the Inspector's office. This new arrangement, introduced by Mr. Garcia, eliminates the customary two percent political levy collected in most other State agencies.[8]

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[8] Interview with John A. Garcia, State Inspector of Mines, Albuquerque, New Mexico, April 6, 1949.

Mr. Garcia's prestige and that of the Mine Inspector's Office is at a high level throughout the mining industry in the State. Mine superintendents, particularly at the major operations in the State, welcome the mine inspections and value highly the opinions of Mr. Garcia and his assistants. His function is regarded by industry in some respects as that of an officer of a service as well as a regulatory agency. It is felt that the Mine Inspector does the industry a service by acting as a check upon them and thereby reassuring both labor and management of the safety of the operation. The impression is that this is one form of regulation that the industry does not mind.

The only other officially constituted State agency concerned with the metals and non-metals industries is the State Bureau of Mines and Mineral Resources. It may be more properly regarded as a service agency. It has no police functions or regulatory powers.

Every state desiring to improve and broaden its economic base must first take stock of itself and discover what it can offer the technologies able to bring it to a higher economic standard. To meet this task and perform all of the attendant functions the State Bureau of Mines and Mineral Resources was established in 1927.[9] This was

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[9] Fowler and Talmadge, op. cit., pp. 89-90.

not the first agency to be assigned the performance of such duties in New Mexico. Dow[10] mentions the creation by the Territorial Legislature in 1909 of a "Conservation Commission and a Natural Resources Survey" to make, among other things,

> an examination of the geological structure of the Territory of New Mexico, including the position, distribution, order and careful study of the various rock strata, with particular reference to their richness in coals, ores, clays, natural fertilizers, building stone, water, oils, gas, and all useful and economic products, the value of same and their accessibility for mining and manufacturing purposes.

and:

> to disseminate as widely as possible by published reports, correspondence, and public addresses correct ideas as to the natural resources of the Territory for the benefit of the people.

The original commission consisted of three members appointed by the Governor and the Governor and Director of the Survey as ex-officio members. It was a highly fluid organization with power to determine the extent and nature of its authority in conservation functions assigned it as well as the size of its staff and pay scales for its personnel.

The precedent has thus been established to some extent for the advent of the State Bureau of Mines and

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[10] Hiram M. Dow, "A Legal History of Conservation of Oil and Gas in New Mexico," Legal History of Conservation of Oil and Gas, A Symposium, Section of Mineral Law, American Bar Association, edited by Walter L. Summers (Baltimore: Lord Baltimore Press, 1938), pp. 101-102.

Mineral Resources. Undoubtedly the sharp rise of the value of mineral production in the State during the First World War and its more than equally sharp decline following that conflict vastly influenced the deliberations of the Eighth Legislature. It is significant as well that New Mexico stood on the threshold of mineral exploitation on a previously undreamed of scale. The years between 1924 and 1929 saw the discovery in fabulous quantities of potash and petroleum.

However, the Legislators abandoned the earlier precedent they had set for sound administrative procedure and made the Bureau of Mines a department of the School of Mines at Socorro.[11] The reasons for this move are obscure and the only logical conjecture possible on the basis of present information is that the motive was to utilize to the full the limited financial resources of the State at the time. The move obviated duplication of expensive laboratories, equipment, and libraries. Offsetting the benefits arising from this arrangement are the administrative defects of reducing the agency to the status of a mere college department, a status far below the level of its function, and vesting the authority for the appointment of its director in the Board of Regents of the School of Mines. Presumably

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[11] Fowler and Talmadge, loc. cit.

the theory behind the Legislature's act was that the Regents are qualified to select capable persons to head the Bureau, since they are also presumably qualified to select the President of the School of Mines. Such an attitude assumes a similarity of functions between the two agencies. The fallacy becomes too painfully obvious. The activities of the Bureau are limited as well, since it is potentially subjected to the jealousy of other departments of the School of Mines when the biennial budgets are drawn. Should the proposal currently circulating in the State to create a "Super-Board of Regents" to oversee the administration of all institutions of higher learning in the State be favorably viewed by some future Legislature and subsequently established, the shortcomings of the present system would become even more evident.

The basic act which created the Bureau of Mines conceived of it as an agency of the public relations type similar to the Natural Resources Survey. Combined with public relations were the functions of a service agency for the mining industry itself, although in relation to the publicity activities of the Bureau these occupied a relatively minor position. Mainly, they were "To assist in the education of miners and prospectors through lectures and publications."[12]

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[12] Loc. cit.

Present activities of the Bureau have extended to the service of the industry far more than was originally intended, if the wording of the act can be taken as a literal interpretation of the intent of the Legislature. Eugene C. Anderson, the present director of the Bureau of Mines, described these activities as being much the same as those of a private consulting geologist. The smaller prospectors, who cannot provide themselves with the services of a consultant, can utilize the services of the Bureau in determining the quality and possibilities of claim or projected site. The Bureau analyzes and assays samples of the ore, examines the ore body, and advises the prospector on the procedure he should follow in developing his claim if examination determines that it is worthy of development. All of these services are free of charge.[13] Since the wealthier miners and mining concerns do not avail themselves of this service, the function makes for much closer relations between the Bureau and the small miner and prospector.

Large mining concerns find the publications of the State Bureau of Mines of value in describing, in a general fashion the disposition and quality of ore bodies in the State as well as the nature of the terrain and the geologic

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[13] Interview with E. C. Anderson, Director of the State Bureau of Mines and Mineral Resources, Socorro, New Mexico, December 1, 1948.

formations of the area. They recognize its value to the small operator, but maintain that they can hire far better geologists and engineers than the Bureau because of the limited funds of the latter. S. S. Hewitt,[14] the acting superintendent of Empire Zinc's mine at Hanover, New Mexico, stated that the value of these services cannot be appreciated fully unless they are compared with situations in other countries where information concerning ores and geologic structure is nearly non-existent. His view was supported by Ira L. Wright,[15] a consulting geologist in Silver City, who added, "You can't measure the value of these services in terms of dollars and cents." No one can begin to determine, he said, how much the State Bureau of Mines has contributed to the mining industry in New Mexico. However, his view differed somewhat from that of Mr. Hewitt, believing that the main function of the Bureau was to publish information about the State and its resources in an attempt to draw more mining companies into the field.

The facts indicate that from the standpoint of administration of resources, there is little in the nature of

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[14] Interview with S. S. Hewitt, Acting Superintendent, Hanover Mine, Empire Zinc Company, Hanover, New Mexico, December 3, 1948.

[15] Interview with Ira L. Wright, Consulting Geologist, Silver City, New Mexico, December 3, 1948.

regulation of any metal mining activity in New Mexico. What governmental intervention does exist relates to the pre-exploitation period, i.e. before actual operations to extract the mineral begin. This relates only to the method and formal procedure of obtaining claim to the land and requirements for an annual amount of development work on the tract. The only direct control of a mine in New Mexico springs from the State mine safety code fixing minimum standards for the hazardless operation of the mines. Aside from this, industry is dominant and independent. In general, the same conditions apply to the non-metal mines with the notable exception of potash where a fascinating relationship between the Federal government and private industry has developed.

CHAPTER IV

POTASH AND THE FEDERAL GOVERNMENT:
A STUDY IN COOPERATION

With the First World War, the United States was completely severed from its only source of potash by the German embargo. The entire world depended almost completely upon the production of the mines near Stassfurt for this vital mineral used in the manufacture of explosives and fertilizer. The latter use of potash is of particular importance in the Southern states of this country. Talmadge and Wooton[1] state:

> ...in the United States more potash has been used for fertilizer than for all other purposes combined. Certain crops, notably cotton, tobacco, and citrus fruits, extract from the soil large quantities of potash, which must be replenished if production of these crops is to be maintained.

By 1916 the price of potash on the American market had advanced by elevenfold to $483.63 per ton.[2]

During the war years potash was manufactured, in many cases with Federal subsidies, from Nebraska brines, Utah alumite, California cement plant dusts, kelp, wood ash, beet sugar water, molasses, and distillery waste. It was during this period that the Searles Lake, California, deposits were developed by the American Trona Corporation. This concern subsequently became the American Potash and Chemical Corporation, and is the sole survivor of the host of potash

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[1] Talmadge and Wooton, op. cit., p. 121.

[2] J. P. Magerson, "The Potash Industry and Federal Taxes," (Memorandum, International Minerals and Chemicals Corporation, Chicago, Illinois, 1943), p. 5. (Mimeographed)

manufacturers born of inflated markets and the desperate quest of the Allied powers. By 1919 the market had sunk to $208 per ton and nearly all of the boom-era producers had ceased operations because they were no longer profitable.[3]

It was this experience that made the discovery in 1925 of a wildcatting oil driller, named McNutt, near Carlsbad so momentous and, as Nelson White, an official of International Minerals and Chemical Corporation, described it, "so wonderful, because, now, the United States would not have to depend upon a foreign source for potash."

Dr. Austin D. Crile, who was State Land Commissioner at the time of the discoveries, related some of the circumstances surrounding their discovery and the leasing of the land. McNutt had obtained a lease to prospect for oil on a section of State land near Carlsbad. In the process of drilling he recovered some mineral salts unknown to him. Assaying showed them to be potash. McNutt immediately went to Santa Fe with several samples of the mineral and guardedly held a private interview with Dr. Crile during which he requested that his lease to prospect for oil be cancelled and a new one issued permitting him to prospect for and develop potash.

Dr. Crile told McNutt to leave some of the samples

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[3] Ibid., pp. 6-8.

with him and to return a few days later assuring him that the information would be held in confidence. Meanwhile he had the salts assayed himself and at the same time contacted the United States Department of the Interior requesting specimens of any potash leases they might have to guide him. But the Federal government had nothing, so it was up to Dr. Crile to set the precedent. Meanwhile, assaying confirmed that the mineral was a high grade of potash. McNutt's request was granted, and Land Commissioner Crile drew up a potash exploitation lease reserving a five percent royalty on gross production for the State.[4]

However, most of the land beneath which the potash deposits lie is federally-owned. During Territorial days the Federal government had vast holdings of public domain in the Southeastern section of New Mexico. With Statehood, Sections 2, 16, 32, and 38 of each township were turned over to the administration of the State.[5] This left nine tenths of the land in the region previously held by the United States Government still under its authority. It was in the midst of all of this public ownership that McNutt stumbled

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[4] Interview with Dr. Austin D. Crile, Roswell, New Mexico, December 6, 1948.

[5] New Mexico fared better in this respect than all of the other states admitted to the Union. They received only half as much Federal land in each township on being elevated to Statehood.

upon one of the great mineral strikes of the decade.

It is the function of the Conservation Branch of the United States Geological Survey to oversee the exploitation of mineral resources on lands belonging to the Federal government. This agency requires mining techniques which will result in the greatest possible production with the least amount of waste. In doing so, it closely supervises the activities of those to whom it leases the Federal government's mineral rights.[6]

But the problems of developing these potash deposits were not only new, but largely unknown, to the Federal government and American industry. The history of potash development in New Mexico has been one of coordinate research concerning the characteristics of these deposits on the part of both.

The New Mexico deposits lie in horizontal beds from four to ten feet thick and at a depth below the surface of from 500 to 3,800 feet. Although the potash mining is centered in New Mexico, traces of the mineral have been found as far into West Texas as Sterling, Mitchell, and Scurry Counties.[7]

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[6] Interview with R. H. Allport, District Mine Supervisor, United States Geological Survey, Carlsbad, New Mexico, December 8, 1948.

[7] Talmadge and Wooton, op. cit., Plate III.

Far more stringent precautions must be taken in the mining of potash than in that of other minerals. Seepage of water into the ore body can seriously damage the mineral rendering it valueless. Ordinarily, this would be a relatively simple problem to approach, but the area in which the potash beds lie is the petroleum center of New Mexico as well and the oil bearing sands are generally found in deeper strata. This has necessitated comparatively extraordinary measures in the drilling of oil, or for that matter any other type, wells in the region. Here the problem becomes interlocked, to some extent, with the activities of the various governmental agencies concerned with the regulation of the oil industry. It is part of their function to adopt regulations requiring the use of measures which will protect the potash deposits.

Generally, potash deposits in commercial quantities are detected by drilling several test wells in the area. Strict regulations to prevent the entrance of water from other strata or the surface are enforced here too. But the split in land ownership between the Federal and State governments involves a split in jurisdiction, naturally, and a split in policy as well. Men in the industry say that there is a marked difference in the stringency of the State and Federal regulations.

The Federal government, for example, requires that a representative one fourth of all analyzed samples taken from a test well be turned over to them. Its rules for the drilling and subsequent sealing of these test wells are very strict and constitute a majority of the regulations. By contrast, the State requires no samples of the tests be turned over to it and, aside from rules ensuring safe operating requirements, has practically no regulations on the methods of drilling or plugging a test well.[8] Conceivably, the existence of such a disparity in regulations might give rise to a situation whereby a person drilling a test well on a section of State land could endanger the deposits in several surrounding sections of Federal land.

The difficulty is met more by the influence of the Federal government than anything else. It is largely the result of the coordinate research and development of the potash deposits by private industry and the government. Government's ideal has been to institute sound conservation principles in the exploitation of potash-- principles which will work to the best advantage of the public interest. Meanwhile, the potash industry has attempted to put "sound business principles" into practice in the development of

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[8] Interview with Charlie Hicks, Mine Foreman, International Minerals and Chemical Corporation, Carlsbad, New Mexico, December 8, 1948.

the deposits. The government and the industry began with approximately the same amount of information about this type of mining at their disposal. The experiences of nearly twenty years in developing the ore has evolved policies of exploitation which each considers the best fulfillment of its ideals. Consequently, the exploitation procedures and testing techniques originated by governmental and industrial cooperation and now the philosophy of government regulation of the industry are utilized when the activity of the potash companies extends to State or privately-owned land. A unity of procedure which is both the best practice in the public interest and grounded in "sound business practice" has been achieved.

Again John E. Miles' campaign plank on the "return" of Federal lands to the State was used as a plumb line to sound the depths of opinion in which this attitude of harmony was expressed. T. M. Cramer, the General Manager of the United States Potash Company, was indifferent to the question stating that he did not see much difference between operating on State and Federal land. At least, this shows that Federal regulation of the industry is not so galling to Mr. Cramer that he would desire to reduce the sphere of control to a jurisdiction more sensitive to political currents that the potash interests might set in motion.

Nelson White, an International Minerals and Chemicals official, indicated that he had no idea of the body of opinion, if any, in the industry toward the question of preference for State or Federal ownership. He further stated that he had no idea of the situation that might arise if ownership was altered and the State was called upon to shoulder the bulk of the responsibility for the direction of potash exploitation policies. However, he did know that the relationships with the industry operating on Federal land had been most satisfactory. Furthermore, the policies were now mutually acceptable and well established.

Mr. White further indicated that the existing harmony has as its cornerstone the normal daily relationships of the men of government and industry. Mr. White has been associated with the potash industry in New Mexico since the days of its origins. The same is true of R. H. Allport, District Mine Supervisor of the Carlsbad office of the Conservation Branch of United States Geological Survey. Each knows the trials of the other in the development of the mineral as well as he knows his own. The two groups, which these men represent, working together have developed the bulk of rules and regulations which govern the industry today. The industry does not, in fact, can hardly, regard as restrictive these norms which are as much the creature of their own efforts as

those of the Federal government. So Mr. White said of the regulations that they are not considered restrictive nor disagreeable. He pointed out that the balance of harmony now struck could easily be disrupted by personnel in government making things more difficult than they should necessarily be. Obviously the coin has two sides and a lack of prudence on the part of industry presumably could just as easily disrupt the same balance.[9]

The Federal government has placed limits on the permits and leases which may be issued to an individual prospector or exploiter. Their policy is to issue permits for five leases of 2,560 acres each for exploitation purposes and five additional leases of the same size for exploration purposes. Although it is permissible to sublet a lease under the law to a qualified mineral exploiter, the direct and indirect holdings of any one person or corporation for exploitation or exploration may not exceed 15,360 acres for each purpose.[10]

Most of the State land in the region is held by the oldest of the potash companies, the United States Potash

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[9] Interview with Nelson White, International Minerals and Chemical Corporation, Carlsbad, New Mexico, December 8, 1948.

[10] Code of Federal Regulations, Circular No. 1592, Title 43--Public Lands: Interior. Part 194--Potassium Leases and Permits. United States Department of the Interior.

Company. Their holdings on State land are nearly double that of their Federal leases since the State places no limits on its leases.[11]

Royalties upon the production of the potash are included in both the Federal and State leases. Situations frequently arise where the surface rights are either owned or leased by a third party. In such cases an agreement is usually struck with him under which he receives a royalty as well. The companies are meticulous about measuring the amount of potash upon which these royalties are paid and have even gone to the extent of scribing upon the walls of the potash mines the boundaries of the tracts and ownerships on the surface above. The amount of mineral taken from beneath these tracts is computed and recorded and payments based upon that figure.[12]

The potash mines are subject to the same inspections by the Federal Bureau of Mines and the State Inspector of Mines as other mines in the State. Even here, the Federal government must depend upon the police power of the State to close these mines, but this apparently is the only sphere in which the State asserts itself.

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[11] Correspondence with Securities and Exchange Commission, Washington, D.C., November, 1948.

[12] Interview with Paige Morriss, Mine Superintendent, International Minerals and Chemical Corporation, Carlsbad, New Mexico, December 8, 1948.

CHAPTER V

TECHNICAL AND LEGAL PROBLEMS IN OIL CONSERVATION

The problem of oil conservation is, strictly speaking, the problem of maximizing the yield of the energy of a petroleum reservoir. It is this energy, produced either by the pressure of water or gas upon the oil pool, which brings the oil to a point in the earth from which it may be recovered and brought to the surface. Without such a force, the petroleum remains inert in the sands of its strata.

Regulation of the rate at which this energy, or drive, is exhausted is the method of conservation. Inefficient methods of exploitation reduce the potential drive upon the oil pool at a rate disproportionate to the amount of petroleum remaining in the ground. In general, it may be said of these methods that they consume more energy in the production of a given quantity of petroleum than is necessary to produce it. Such methods accomplish a greater rate of production, but their utilization exchanges the immediate gain of high production for the ultimate reward of greater recovery of the resource.

A highly competitive market for petroleum products and outmoded legislation and court decisions for decades posed a paradox balking the solution of the problem of conservation. Ely[1] divided these complications into four

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[1] Northcutt Ely, Oil Conservation Through Interstate Agreement, Memorandum prepared for the Federal Oil Conservation Board (Washington: Government Printing Office, 1933), pp. 3-14.

categories: the doctrine of capture, the relationship of the lessor and lessee, the dominance of the flush pool, and the limitations of state lines.

Discussion of the problem will be facilitated by considering the third and then the second of the above factors before entering a discussion of the legal questions involved.

A flush pool is one from which the oil flows freely to the surface under the drive of its own reservoir energy, that is, without the utilization of any artificial stimulus to its flow. Ultimately this energy is consumed, and if the pool is allowed to freely seek its own rate of production, the drive is all the sooner exhausted. However, it is obvious that this type of pool may be operated for a brief period at a lower cost than an older pool in which an artificial stimulus is used to recover the resource. Furthermore, the nature of an oil market where supply and demand do not operate in unison is a great temptation to produce a pool "wide open" and garner the profit of a price that is to some extent artificial. This tends to flood the market placing the older producer at an even greater disadvantage for the margin of profit now seeks the level of the pool with the lower overhead. These are the basic conditions that arose in 1930 and 1931 when the Oklahoma City and East Texas

fields, both fabulously rich and productive, were discovered almost simultaneously. The price of oil sagged and finally plunged to ten cents per barrel.

The further evil that arises from this type of pool is overdrilling and a type of race between the individual operators to recover as much of the petroleum as possible. Sections of Texas, notably around Borger, and Southern California's famed Signal Hill are forested with oil rigs literally no more than thirty yards apart. In some cases this concentration of activity is motivated by a desire to protect property rights. Since it is a characteristic of an oil well that it does not draw only from the area directly beneath the plot of land on which its rig rests, but rather from beneath all of the surrounding land and from under neighboring owners, the only avenue of protection left open to such owners is to drill their own oil well and produce it. Unless they do, their neighbor reaps all of the profit from their property. Furthermore, production must be sustained at the maximum possible rate once begun for every slackening in the flow of the well only means that the neighboring operator is benefiting from the inaction of his competitor.

The total production of the flush pool operating under such conditions is temporarily increased at a hectic rate. However, once the oil is produced, it must be carried off and sold somewhere or stored pending its transport to the

market. Generally, pipeline facilities are not adequate to the original spurt of a highly productive flush pool. An orgy of exploitation only leaves them in a hopeless position. Furthermore, storage facilities of a permanent and efficient nature, steel tanks, cannot be constructed at the rate required by the production. In the East Texas fields in 1931, the operators solved their problem by storing the oil in hazardous and wasteful open earthen pits.

The factor of the lessor-lessee relationship and its effect upon the problem of conservation is readily understood upon the basis of what has already been said concerning the flush pool. Ely[2] points out that three implied covenants are brought into operation once the discovery has been made. The very statement of them is mute, but complete, evidence of their bearing upon the situation. They are, as stated by Ely:

> First, there is an implied covenant to produce for market.
>
> Second, there is an implied covenant to continue to drill and develop leased land after discovery.
>
> Third, there is an implied covenant to drill and produce offset wells to protect the premises from drainage.

All of these factors ultimately came into play in the flush pools. It was American free enterprise at its

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[2] Ibid., pp. 10-11.

competitive worst presumably straining mightily to raise even higher the contemporary standard of living. The petroleum industry advanced to the point of being able to produce forty-two gallons of oil in 1931 for the price of two glasses of pre-prohibition beer.

Neither the courts nor existing legislation was of much help in meeting the situation. The courts were to some extent responsible for the then current dislocation through their earlier application of the rule of capture to petroleum production. The rather naive legal fiction likened oil to a wild animal and concluded that whoever succeeded in reducing him (it) to captivity was his (its) legal owner and master. Wild animals do not possess very many of the same characteristics as oil and gas so that the only accomplishment of this type of reasoning was to further injure the petroleum reservoirs.[3] This line of reasoning was succeeded for a period by the application of the rule of percolating waters which recognized the fact that while the resource was under the land of a given owner, it was property in which he had an absolute title, but that once it migrated across the property line, it no longer belonged to him. The courts concluded that

...if it is lawful to take water from a substrata by the

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[3] Ibid., pp. 3-6.

> 'exercise of all the skill and invention of which man is capable,' we see no reason why it is not lawful to produce oil by those means, especially as the possession of the soil for purposes of tillage gives the owner no actual possession of the oil and gas underlying it.[4]

This represented a step toward the cessation, though not by the most desirable means, of indiscriminate production. At least, the courts now regarded petroleum as property and not as ferae naturae. Although the results were temporarily the same as under the law of capture and the engineering facts involved in the problem received no greater cognizance, the legal mind was now properly fertilized for the next step in the slow journey toward conservation.

In 1900 a case arising several years earlier in Indiana over the authority of the State to regulate production reached the Supreme Court. In essence the case was strictly a question of the law of capture as opposed to conservation in the public interest. However, the concept of property was a stronger force then than the concept of the public interest, so that the latter question was relegated to a position of secondary importance. The laws had been attacked upon the grounds that they resulted in a deprivation of property without due process of law. In reaching its decision, the court took note of the physical characteristics of oil and gas

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[4] Jones v. Forest Oil Company, 194 Pa. St. 379, 44 Atl. 1074 (1900).

and in the majority opinion, delivered by Chief Justice White, concluded that it is within "the police power of the state to legislate for the prevention of waste of natural resources for the protection of the public interest." But turning to the property question, the court had a lot more to say. It first said that the state had the power to legislate for the protection of the property rights of owners in a common source of supply of oil and gas. The decision further explained that such owners had the equal privilege of production but that its unlimited exercise

> ...may result in an undue proportion being attributed to one of the possessors of the right to the detriment of the others, or by waste by one or more, to the annihilation of the rights of the remainder.[5]

This is the essence of the doctrine of correlative rights which postulated that each producer in an oil pool has a duty to the other producers not to injure the reservoir or take more than his share of the resource from it. Although the decision simultaneously recognized the power of the state to legislate for the regulation of oil production, it built a far more logical case for it to legislate in the common interest of the property rights of the landowners in an oil pool.

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[5] Ohio Oil Co. v. Indiana, 177 U.S. 190, 20 S. Ct. 576, 44 L. Ed. 729 (1900).

The doctrine of correlative rights and its attendant implications is the thread from which the fabric of modern oil conservation has been woven. The whole philosophy of the present system in the United States has become tinged with it, and, as later noted, has tinted to a deeper hue the mechanics of the solution as it was reached in New Mexico thirty-five years later.

Mere enunciation of the doctrine of correlative rights did not mean that the philosophy of the rule of capture disappeared from the operations of the oil industry. Other states were slow to follow the lead of Indiana and the doctrine cannot be enforced if there is no legislation to breathe life into it. The rule of capture was still vital enough by 1932 for the Supreme Court to observe that

> Where proportional taking from the wells in flush pools is not enforced, operators who do not have physical or market outlets are forced to produce to capacity in order to prevent draining to others having adequate outlets.[6]

To this Ely[7] writing in December of the same year could add

> In practical application the capture rule, recognizing no right in a landowner to retain his oil and gas in place against his neighbor, and hence no protection against drainage except by

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[6] Champlin Refining Co. v. Corporation Commission, 286 U.S. 210, 52 Sup. Ct. 559, 76 L. Ed. 725 (1932).

[7] Ely, op. cit., p. 8.

> offset drilling, forces oil into the market in response to the number of offset wells rather than the market demand.

And the Federal Oil Conservation Board could note:

> Both the immediate potential supply of crude oil and the quantity recoverable over a period of years are dependent upon a factor which no State has found means to effectively control, and which stimulates production without direct relationship to the demand for oil--the system of offset drilling necessitated by the prevalent doctrines of ownership. An oil pool, being a physical unit, is subject to drainage by any surface owner regardless of the oil content of his acreage. In the absence of statute or agreement, the only recourse of a coowner is to compete for capture by offset drilling. The State's authority to control this basic factor, drilling, is largely untested, except for some successful efforts to control spacing of wells. No State has endeavored to declare an oil pool to be a unit and to require the development of it as a unit for the common protection of all owners.[8]

The oil men preferred to fight the matter out among themselves in the best traditions of rugged individualism. Their posture was unlike that of Daniel Boone or Davy Crockett, and their weapon was far more devastating than either the Kentucky long rifle or the Bowie knife. It was the practical application of the rule of capture. These hardy souls took the lids off their oil wells, asked no quarter and gave none. Surprisingly few of them resorted to court litigation considering the legions that were involved in attempting to subdue one another by drowning each other in oil.

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[8] Ibid., p. 9.

Writing in 1938 Summers[9] remarked in retrospect:

> This practice has had a certain measure of influence upon the courts themselves. The cases in which operators and landowners actually sought the aid of the courts in the protection of their correlative rights, although few in number, are as authoritative as the few cases actually declaring absolute privileges, or the law of capture, and are based on sounder reasoning, but have been lost sight of through the practical operations under the law of capture. In decisions supporting the constitutionality of conservation legislation, the courts have, as a matter of fact, relied more often on the police power of the state to prevent waste for the protection of the public interest, because in many such cases this reason was sufficient. In those cases where the courts have also upheld such legislation on the theory that the state has the power to protect correlative rights, (they have) merely stated their existence in the language of Chief Justice White.

The independent-minded operators staunchly continued upon the pursuit of their chosen solution until 1931 when they suddenly found that they had given themselves an overdose of competition. Their sponge of an oil market had become saturated thanks to Oklahoma City, East Texas, and the horde of rugged individualists that invaded these two fields.

It is here that Ely's fourth factor, the limitations of state lines, becomes a matter of import. Presumably by

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[9] Walter L. Summers, "Modern Theory and Practical Application of Statutes for the Conservation of Oil and Gas," Legal History of Conservation of Oil and Gas, A Symposium, Section of Mineral Law, American Bar Association, ed. by Walter L. Summers (Baltimore: Lord Baltimore Press, 1938), pp. 7-8.

1931 the courts had implied that the states had enough power to legislate for the regulation of production within their own borders. They could formulate statutes governing the production within pools upon the basis of the doctrine of correlative rights and could adjust production between pools upon the basis of conservation of the resource in the public interest. But no agency or vehicle existed for the adjustment of production between states. Had such legislation been on the books, it would merely have carried the battle of rugged individualism to a state level. Considering the position of three states, Texas, Oklahoma, and Pennsylvania, the results become readily apparent. Assuming the existence of such legislation, Texas and Oklahoma might have decided to slug it out between themselves, on a statewide coordinated basis, for the oil market. Each had flush pools of vast capacity, but Pennsylvania, with an oil industry more than half a century older than either of these states was by then producing oil through the use of artificial pressurizing methods. The average overhead of oil production in Pennsylvania was, therefore, higher than that of either Texas or Oklahoma and ultimately the Keystone State would have been frozen out of the oil market.

By 1931 the hour had struck for formulating a method of closing the gap between existing legislation and legal

rules on the one hand and, on the other, either desirable economic or social policy. For the oil men it was a matter of attempting to draw the solution toward the former. The public interest demanded that a broader view be taken. Three avenues to the solution of this situation lay open to the oil men. In the order of their imminence they were Federal control, voluntary agreements within the industry, and Interstate agreements.[10]

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[10] Ely, op. cit., p. 15.

CHAPTER VI

THE INTERSTATE OIL COMPACT COMMISSION-THE SYNTHESIS

Federal control of the oil industry was proposed as early as 1926 in hearings before the Federal Oil Conservation Board by Henry L. Doherty, President and founder of Cities Service Company, a large public utility, who advanced a plan for direct control of the drilling of wells, production of oil, allocation of markets, and transportation from well to refinery. He argued that the power of such administration by the Federal government rested in the commerce power, treaty power, war power, and powers of taxation under the Constitution.[1]

The possibilities of success of such a scheme in 1926 were less than slim, for Charles Evans Hughes commented:

> The Government of the United States is one of enumerated powers and is not at liberty to control the internal affairs of the States, respectively, such as production within the States, through assertion by Congress of a desire either to provide for the common defense or to promote the general welfare.[2]

Mr. Doherty shot back at him:

> If the Federal Government has no power to conserve oil and prevent waste, then our plan of government is defective, because the power is not vested any place for us to do that which may be necessary for our national defense.[3]

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[1] Ely, op. cit., p. 15.

[2] Ibid., p. 16.

[3] Loc. cit.

The Oil Conservation Board, a creature of Calvin Coolidge, was somewhat abashed by this heresy on the right in the midst of the milk and honey days of the middle Twenties. Its comment was cautious, but to those in the industry who could or would read the handwriting on the wall portended by the statement it was the first step toward Federal control.

The Board said:

> The power of the Federal Government to regulate oil production is doubtless limited to its own oil lands, unless the national defense is imperiled by waste or exhaustion of the oil supply. Here the policy of reservation to meet future Federal requirements has already been established and is being perfected as prompted by increased appreciation of the need and as guided by better understanding of the means to that end. It has been suggested to the board, however, that the Government's jurisdiction as a sovereign owner of the oil under its land may justify and authorize Federal legislation to prohibit adjoining owners from appropriating the oil by means of wells drilled on their property. This suggestion involves many interesting implications concerning State and Federal power, but State legislation for the protection of all owners would be preferable, and the Federal authority, if any, should be invoked only when it is clear that the State is unwilling or fails to act, or when naval reserves are threatened with depletion.[4]

If the control of the Federal government could creep out from the boundaries of its own domain to control adjoining operators, that was bad enough. But if it thought that the "national defense is imperiled by waste or exhaustion," control for the entire industry was imminent. At the same

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[4] Loc. cit.

time the Board had indicated that the state was the key to the whole situation and could be drawn toward either the pole of the industry or the Federal government. Either this was disregarded by the industry as a whole or considered as reprehensible as Federal control itself.

In any event, the industry next came forward with its own plan. It was not the plan of the entire industry, nor did it gain much favor among the oilmen. It was called voluntary proration and amounted to little more than the operators in a given pool dividing up the available market, which usually meant the capacity of the transportation facilities, among themselves. The plan was adopted mainly in California. Its continued use there and further study by the more forward thinking in the industry brought about many refinements including an alteration in its basis of allocation, that of adjusting supply to demand. The American Petroleum Institute spearheaded the campaign in favor of this system and in 1928 ambitiously presented the Federal Oil Conservation Board with a plan for a worldwide voluntary agreement plan which would adjust production over the face of the entire earth. This involved allocating production among countries and within each country. The companies themselves were to handle the plan and all of the necessary inter-corporation agreements.

An impasse shortly developed to forestall the adoption of this plan. The Attorney General of the United States was of the opinion that this would be an agreement in restraint of interstate commerce, a violation of the anti-trust statutes. The Federal Oil Conservation Board, he said, had no power to grant the industry an immunity from the operation of these acts.[5]

In his reply to the American Petroleum Institute's proposal, Ray Lyman Wilbur, chairman of the Board, indicated the method which might be followed to solve the problem of oil conservation without completely devastating either private property or the public interest. It reaffirmed the stand taken earlier that the solution was through the states. Mr. Wilbur said:

> The problem appears to the board, therefore, due to the legal inhibitions, to be one in the real solution of which action must be secured from the different States. The board recognizes that individual State action without coordination would not cover the question, but with a view to bringing about such a program and its coordination, the board believes it would be worthwhile to renew discussion with the State authorities of the three or four principal oil-producing States, particularly to learn if it is not possible for them to enter upon an interstate compact under the provisions of the Constitution authorizing such compacts to which the Federal Government through congressional action would be a party. The character of such a compact would need much consideration, but it could well

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[5] Ibid., p. 17.

> comprise creating a joint board for the purposes of constructive conservation and thus secure the Nation from the very real peril that will lie in the reckless exhaustion of our oil resources.[6]

The scheme had been proposed earlier, by the Oil Conservation Board in 1926 and by Mr. Justice Brandeis in 1923. It did not gain popular support among the industry or the principal states concerned until 1931 when the ten-cent barrel of oil provided the necessary economic stimulus. The Achilles' Heel of rugged individualism had been struck.

The Governors of Kansas, New Mexico, Oklahoma, and Texas met in Fort Worth, Texas in February of 1931 to take the initial steps in this direction. They formed an Oil States Advisory Committee which worked throughout March and April of that year on the formulation of an Interstate compact. In May, in a meeting at Austin, Texas, a draft for a Uniform Legislative Act for Conservation and Interstate Compact was adopted. This document was presented to Congress in the same year but was not approved.[7] However, the efforts of the oil states were not entirely fruitless. In September of 1931 the Governors of Kansas, Oklahoma, and Texas signed an agreement in which they agreed to limit production within their

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[6] Ibid., p. 18.

[7] Interstate Oil Compact Commission, A Summary of the Background, Organization, Purposes, and Functions of the Interstate Compact to Conserve Oil and Gas, (Oklahoma City: The Interstate Oil Compact Commission, 1947), p. 2.

respective states so that the total production of the country during the rest of 1931 and during 1932 would not exceed 2,379,000 barrels daily.[8] This put a makeshift and insecure cover on the country's oil wells. It was difficult to administer since it did not include all of the oil producing states and its legal basis was somewhat uncertain since it did not have the sanction of Congress. It was not flexible enough to meet the changing conditions of the petroleum market.

Accordingly the Oil States' Advisory Committee continued its work during 1932, 1933, and 1934, striving to iron out the compact so that it would be agreeable to industry, the states, and Congress. In effect, both the free enterprise system and the public interest had to be harmonized.

Meanwhile, the advent of the compact was forestalled by the enactment of the National Industrial Recovery Act in June of 1933 and the subsequent adoption of the Code of Fair Competition for the Petroleum Industry.

By the time this act was passed the oil industry had been so prostrated by rugged individualism that a measure of Federal control actually was attractive. For a time it appeared that the industry might become part and parcel of the Federal government. In November of 1934 Secretary of

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[8] Ely, op. cit., p. 22.

the Interior Harold L. Ickes addressing a meeting of the American Petroleum Institute put the case for greater Federal control of the oil industry and advanced the proposal that it should be declared a public utility. The Board of Directors of the Institute voiced its opposition by a narrow margin.[9]

Federal control was on the way out, but it had made 1934 a hot year for both sides. Early in the year a Federal Curcuit Court declared the NIRA unconstitutional and the Supreme Court upheld its verdict in the first week of 1935. Congress began consideration of other measures to fill the void thus created. Representative William P. Cole, (D.), Maryland, though he was not its original champion, ultimately became the standard-bearer of the movement in Congress to re-institute by other means Federal control of the oil industry. He was chairman of the Petroleum Investigating Committee of the House Committee on Interstate and Foreign Commerce, which held hearings throughout the oil-producing regions of the country during 1934 to determine the basis of the question. Although he had sponsored the Cole Bill in the 1934 session of Congress which moved for Federal control of

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[9] Blakely M. Murphy, "The Formation of the Interstate Compact to Conserve Oil and Gas," Conservation of Oil and Gas, A Legal History, 1948, ed. by Blakely M. Murphy (Chicago: Section of Mineral Law, American Bar Association, 1948), pp. 557-9.

the industry, on January 2, 1935, the committee submitted a report which recommended a "wait and see" policy since the Interstate Compact was under informal consideration at the time. The committee endorsed this move, but added that if the Congress did not approve the Compact, ample time would remain to enact Federal control legislation.[10]

Meanwhile, the closing weeks of 1934 saw the greater development of the cause of the Interstate Compact. The prime mover among the personalities involved in this compromise action was Governor-elect E. W. Marland of Oklahoma. He had previously been a member of Congress and in the 1920's had headed The Marland Oil Company, now Continental Oil Company. Whatever had been the course of his affections in the past, the welfare of the state of Oklahoma as a whole was now his concern and what happened to or was done by the oil industry would have a profound effect upon that Commonwealth.

He began by making flying visits to Governor Landon of Kansas and the Governor-elect Allred of Texas. On the basis of these conversations he issued invitations to the Governors of New Mexico, California, Kansas, Texas, Louisiana, Michigan, and Wyoming to attend a conference at his home in Ponca City, Oklahoma on December 3, 1934 for the purpose of

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[10] Ibid., p. 562-564.

discussing the possibilities of a compact. The results were somewhat disappointing since only the Governors of Texas and Kansas accepted the invitations. The Cole committee also attended in the capacity of observers, but even the possible imminence of Federal control presaged by the presence of this body did not serve to produce anything of value at the conference. Instead, the tinder was here kindled for an acrimonious dispute that was to rage for more than two months between Texas and Oklahoma. Allred had run on a campaign promise of opposition to price-fixing, monopoly, or regimentation in or of the oil industry. The Governor of Texas was absolutely unwilling to compromise that principle and suspiciously prodded Marland's proposals with a ten-foot six-shooter. The conference broke up with nothing decided.

On January 3, 1935 another meeting was called at Marland's home. Attendance was good this time with the states of Oklahoma, Kansas, Illinois, New Mexico, Arkansas, Louisiana, California, and Texas represented. The fear of Texas for its independence again came to the fore. The political side of the issue was represented by the demand of the chairman of the delegation, Jack B. Blalock, that the projected document be "an interstate compact and not a compact with the Federal Government." He was objecting to the Marland draft which provided for the joint participation of the states and the

Federal Government. The rest of the country felt that the Federal Government would not only be an asset but an essential in the proper administration of the plan. The Texas position was that the proper sphere of Federal activities was somewhere outside of the boundaries of the Lone Star State and was confined to prohibiting the transportation in interstate commerce of illegally produced oil and the curtailment of importation of foreign crude oil. This was positive enough for Texas. She had ample laws on the books to prevent waste of petroleum within her own borders. Other states could do likewise. The negative side of the Federal government's participation should be to see to it that the states did not encourage within their own borders or by their agreement through the compact any system of price-fixing, regimentation, or monopoly. The conference withdrew the phrase which had given rise to the objection with the understanding that the Federal government would be represented on the compact.[11]

This constituted a step forward, but the placation of Texas was only temporary. Following the adoption of a resolution favoring a compact and looking toward its adoption, the principal features to be included in the compact came under discussion. Again the problem of price-fixing and monopoly came to the fore and the Texas delegation put it

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[11] Ibid., p. 558-562.

there. The basis of this dispute was the effect of price upon conservation. Marland favored a compact that would prevent economic waste, that is, production in excess of market demand. Texas favored only a compact which would look toward the prevention of physical waste, that is, production of the wells in a manner which would assure the maximum ultimate recovery disregarding the status of the market. No compromise was reached at the Ponca City meeting and the conference adjourned with the understanding that it would reconvene upon the call of Governor Marland when three states had informed him they favored the compact.

The next meeting was called in Dallas on February 15, 1935. Murphy[12] characterizes as one of the main features of this convention the crystallization of a struggle for supremacy between Marland and Allred. Whether the battle was this personal or not is hard to say, but certainly by this stage of the controversy there were but two schools of thought and the Governors of Oklahoma and Texas found themselves in opposite camps on the question of economic v. physical waste. Although Marland commanded a majority of the votes in the conference, Texas could upset the compact in short order by abstaining, taking the lid off the East Texas

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[12] Ibid., p. 564.

pool again and making oil as cheap as water. The debate flared for two days shattering the somber sobriety of Dallas' staid Adolphus Hotel. The inevitable hour of compromise struck and it was the chief of the Colorado delegation, Judge Warwick M. Downing, who brought the two warring camps under one banner.[13]

Downing apparently recognized some validity in each stand. Addressing a quarterly meeting of the Interstate Oil Compact Commission in August of 1947[14] he reviewed the aspects of the question of price in a conservation program saying:

> ...a cheap price for crude (meaning a price less than the cost of production) means actual important physical waste; brings petroleum unduly into competition with coal, whereby the commodity of higher use value is utilized...a fair price is necessary to conserve our oil reserves,...to maintain exploratory, finding and development costs, which are the essential prerequisite to the continuance of our petroleum supply and true conservation.

He contrasted the attitude in Dallas in 1935 and the modern philosophy of price control as a method of conservation by saying:

We must keep clearly in mind that price fixing

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[13] Ibid., pp. 567-569.

[14] Warwick M. Downing, "The Powers of the Interstate Oil Compact Commission," The Interstate Oil Compact Quarterly Bulletin, VI:2, August, 1947, p. 38.

> of the kind mentioned in the Compact was price fixing as understood at that time, namely, price fixing to enrich the producer at the expense of the consumer. But in the conservation program promoted by this Commission, we have traveled a long course. Price control, as understood today, may be highly important, or indeed essential to conservation. It is price control of that type, that is, price control for the protection and promotion of the welfare of the economy, that is clearly permissible. It is price control of that type that may be, and should be considered by the Commission from time to time, and which may be a matter of full and complete discussion in any of our general forum meetings.

The compromise offered by Downing made him to the Compact what Benjamin Franklin was to the Constitutional Convention in 1787. What he proposed was to include in the compact provisions which did not negate the principle of economic waste and which promoted the prevention of physical waste. The compromise draft as it stood when he arose to address the conference already included an article declaring the Compact's purpose to be the conservation of oil and gas by "the prevention of physical waste thereof from any cause." Another article stated that:

> It is not the purpose of this Compact to authorize the states joining herein to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, or create or perpetuate monopoly, or to promote regimentation, but is limited to the purpose of conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations.

Both of these provisions incorporated the main features of the Allred draft of the Compact. Downing felt that the

central point of the Marland proposal was embodied in the paragraph which set forth its purposes:

> By this compact certain of the oil producing states recognizing that regulation by the State is essential to the conservation of oil and gas, undertake voluntarily to coordinate the exercise of the police power within their several jurisdictions to promote the maximum ultimate recovery from the petroleum reserves of the Nation.[15]

If price was considered a factor in maximum ultimate recovery, and it was apparent from the course of events that Marland considered it so, the door would be wide open for price legislation by the states.

Downing resolved the conflict by proposing that a clause be included in the Compact giving the Commission established by that Compact the power

> ...to recommend the coordination of the exercise of the police powers of the several states within their jurisdictions to promote the maximum ultimate recovery from the petroleum reserves of the said states, and to recommend measures for the maximum ultimate recovery of oil and gas.

The effect was threefold. It did not prohibit the adoption of legislation based on the prevention of economic waste at a state level and on anything other than a state level made the Oil Compact Commission the arena of that question. The clause was broad enough not to be in conflict with the principle of prevention of economic waste. The Compact

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[15] Murphy, op. cit., pp. 736-738.

elsewhere contained clauses which affirmed the disapprobation of the several states of "price fixing, monopoly, and regimentation" but did not prohibit the enactment by them of legislation which aimed at the prevention of economic waste.[16] The compromise must have looked a little like Joseph's coat to the assembled delegates, but it was a masterful political stroke, adhering to the basic principle of satisfying all sides of the dispute.

Even so, Southwestern tempers had now reached large and very nearly uncontrollable sizes. Downing realized that unless this proposal was accepted the conference would break up and the last possibility for interstate ccoperation would be exploded. The alternatives after that were a return to a measure of the irresponsible overproduction of past years with consequent increasing bad blood between the states involved or immediate Federal control, since the Congress was quietly observing the Dallas debate.

To forestall further acrimony in the conference which would very probably doom the Interstate Oil Compact to eternal repudiation, Downing moved that his proposal be accepted by acclamation. He accompanied it with a statement worth repeating for its lesson in diplomacy, for this is essentially

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[16] Ibid., p. 569.

the problem that faced him.

If we can't agree, let's go home.

I for one don't want to leave this conference without doing my best to accomplish something. We are agreed on essentials. We are agreed on confining the purposes of this pact to physical waste. We are agreed about the "stripper" wells.. we all know nobody wants to do anything to hurt them. We are agreed that we can't produce from flush wells enough petroleum to supply the needs of the Nation.

The only difference among us is by what name we shall call the rose.

If Texas chooses to protect its oil reserves by regulations issued in the name of prevention of waste, and will accomplish its purposes in that way, let's not attempt to cram something down its throat repugnant to its laws, traditions, or even its prejudices if you will.

Any compact we make will be criticized if no board is set up to allocate production, but we are agreed that is something we can't do.

If we can't agree let's abdicate and turn the whole thing over to Secretary Ickes, forgetting we are sovereign states and admitting our incapacity to handle our own affairs.[17]

The effect was to deflate the ego of state sovereignty sufficiently and for long enough to erect the framework of the Compact while posing for the disputants another object for their fury--the spectre of Federal control personified in Harold Ickes. They were able to forget their anger at one another over Mr. Ickes for by now he was approximately

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[17] Downing, op. cit., p. 40.

as popular with the oil industry as Satan in a parsonage. The proposal was accepted unanimously and the delegates worked themselves into such a state of harmony that they passed a resolution also introduced by Downing calling upon the Congress to pass an act prohibiting the movement in interstate commerce of illegally produced oil, in effect putting teeth in state legislation. Downing may have staged a shotgun wedding, but no one in the Compact today would admit it. Some of Downing's remarks in 1947 contrast remarkably with the tenor of the rest of speeches and papers found in the Compact's publications.

The Compact was ratified the same year by New Mexico, Oklahoma, Kansas, Colorado, Texas, and Illinois. In August Congress approved the pact and President Roosevelt signed it.

The Interstate Oil Compact Commission has grown into an impressive body since the year of its heated origins. It now maintains a permanent office in the State Capitol of Oklahoma at Oklahoma City, publishes a quarterly bulletin summarizing the activities and reports of its quarterly meetings, a monthly newsletter, and a monthly statistical bulletin.

In 1938 acting upon the proposal of New Mexico's representative, Hiram M. Dow of Roswell, a leading legal

authority on oil and gas problems, the Commission at its April meeting began the establishment of an impressive advisory committee structure. Ultimately this grew until it presently is composed of a legal committee, engineering committee, regulatory practices committee, economics advisory committee, research and coordinating committee, public lands committee, interstate relations committee, by-laws committee, stripper well committee, and a secondary recovery advisory committee.

Also attached to the Compact Commission are industry advisory committees drawn from the following organizations: The Independent Petroleum Association of America, New Mexico Oil and Gas Association, American Gas Association, Mid-Continent Oil and Gas Association (Kansas-Oklahoma, Louisiana-Arkansas, and Mississippi-Alabama Divisions each separately represented) Texas Mid-Continent Oil and Gas Association, American Association of Oil Well Drilling Contractors, Indiana Oil and Gas Association, Independent Natural Gas Association of America, National Stripper Well Association, and the National Oil Conservation Committee. The Department of the Interior and the Federal Power Commission are represented also.

Membership in the Compact now stands at twenty states with Georgia participating as an associate member. The

Compact is entirely supported by legislative appropriations from its member states and accepts no funds from other sources.

The Compact weilds no authority and has no police power to back it up. It relies solely upon its own prestige and the cooperation of the several states for the realization of whatever goals it sets for itself. Hiram M. Dow, who has been New Mexico's representative on the Compact Commission continuously since 1935 states that it is:

> ...established primarily as an educational force designed to promote within the industry, and among the states, conservation mindedness, and an understanding of conservation objectives, appropriate legislative procedure and administrative methods. It acts as a liaison between the industry, the states, and the Federal Government. The Commission is purely a fact finding body engaged in the conduct of studies to determine the most advantageous methods, practices and conditions of conservation. It makes use of its normal source and prestige within the industry and with the state conservation agencies to bring about the adoption in each state all required practices necessary to prevent physical wastage of oil and gas. The Commission exercises no function which attempts to tell any state or any body what they can or can not do. It is an agency created for the purposes of attempting to get the states to agree among themselves upon a conservation program that will conserve natural resources by the prevention of physical waste without any outside suggestions or influences of any kind, nature or description.
>
> It is a Governmental Agency without the power of compulsion. It depends entirely upon itself, for its influence by its power to educate, inform and investigate the normal source of prestige which the Compact and the Commission exercises in the field of petroleum conservation is tremendous--its potentialities even greater. There is no doubt but that the Commission

> may type all prohibited waste in the United States by holding a hearing for determination of that waste by the Commission and a publication of its findings.[18]

Undoubtedly the Compact has served to vastly improve the conservation measures and practices of its member states. It has conducted national surveys of technical engineering problems, devoted the entire agenda of several of its meetings to the problem of these and similar matters from both the technical and legal aspects, and it is seldom that a quarterly meeting is not presented with a paper on a specialized problem. It has drawn up model oil and gas conservation legislation embodied in several model statutes designed to meet the needs of small and large producing states. It can point, as well, to commendations of its work by the late President Roosevelt, Representative Cole, Speaker of the United States House of Representatives, Sam Rayburn, the Governors of several states, and leaders of industry.[19]

In this respect it has done an admirable job of fulfilling the task it set for itself. It is largely an academic question whether or not the oil industry could have

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[18] Correspondence with Hiram M. Dow, Representative of New Mexico on the Interstate Oil Compact for the Conservation of Oil and Gas, Roswell, New Mexico, January 29, 1949.

[19] The Interstate Oil Compact, The Interstate Compact to Conserve Oil and Gas, A Summary of its Organization, Purposes, and Functions (Oklahoma City: The Interstate Oil Compact Commission, 1942), pp. 19-24.

been successfully nationalized in 1935. The difficulties involved in gaining even interstate cooperation would seem to indicate that this could not have been done. If so, then the Compact was the best possible compromise in the public interest at that time for the body politic of that year was hardly prepared for the strife and violence that might have accompanied a more radical move.

The question of the moment is whether or not the Compact can persist in the public interest. It may be more properly characterized as a quasi-official body for it operates in a twilight zone of government somewhere between the representative democracy of the state and national levels. Tactically speaking, it is an opening wedge through which the influence of the oil industry itself can be more effectively directed at the Federal government and the states, but particularly the latter.

The basic motivation in the formation of the Compact, as indicated above, was a concern upon the part of the chief executives of the several oil producing states for the welfare of their states. Texas and Oklahoma would have been in a crisis situation without some solution to the then existing problem. But the industry was also facing a problem born of its own cantankerous mood and deeds. Thus, from the beginning, states' interest and the industry's interest have been closely identified. The public interest has been

considered to depend upon the well-being of the industry itself in the oil producing states and this in turn, makes the industry's interest paramount in the situation.

The compact method has been successfully used in other situations such as river water allocation, but the problem of oil conservation is far different. A river is not a dynamic social being with the ability to exert positive political and economic influences of its own accord. Furthermore, it does not spread in a network of subsidiaries and affiliates over the entire face of the earth and even a violent earthquake in Saudi-Arabia will not riffle its surface. A river just lies there.

The Compact Commission's legacy is fear of nationalization of the oil industry born of a real threat in 1934 and 1935 and nurtured by the neuroses of the years that have followed. Governor Beauford H. Jester of Texas epitomizes that not inconsiderable school of thought in the Compact which considers the function of preventing nationalization of the petroleum industry to be of at least equal importance to the prevention of waste of the resource. In this respect he manifests the modern outgrowth of the original concept of the Compact--that the public interest depends upon the well-being of the particular interest. The corollary principle developed from this stand is that the particular interest

is best served on the state level, i.e. as close to the industry as possible. The conclusion is that the public interest even though it be national can be brought to its fullest realization on the state level.

The California Tidelands decision of the United States Supreme Court and the question of ownership of the public domain have, to the minds of the Compact members, served to increase the possibility of nationalization. As a result their demands for the correction of what they consider to be these most intolerable conditions have become more insistent and frequent.[20]

Occasionally, statements to the contrary of the general tenor of expressions of opinion are heard by the Commission, but they fail to stem the flow or the fury of the attacks. In 1944 Senator Carl A. Hatch of New Mexico in an impromptu speech remarked:

> The states are interested in conservation just as much as the Federal Government. That is one of the places where there is no room for conflict. What is beneficial to one is beneficial to the other. What is beneficial to the state and the Federal Government is beneficial to the operator and, in

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20 Hiram M. Dow, "Response," Interstate Oil Compact Quarterly Bulletin, III:4, July 1944, pp. 8-11; Beauford H. Jester, "Nationalization--Panacea or Pandemic?" ibid., VII:1, May 1948, pp. 8-11; Beauford H. Jester, "Report and Comments," ibid., VII:2, September 1948, pp. 11-17; Ernest O. Thompson, "History and Accomplishments of the Interstate Oil Compact Commission and Clarification of Some Popular Misconceptions," ibid., pp. 21-26.

the long run, to the consumer as well. There ought not to be conflict.

At another point he said:

> I do not think there is any basic room for conflict between the state and Federal governments in the orderly development of our mineral resources, including oil and gas. On the contrary, everything that brings antagonism and conflict is destructive of the orderly development and conservation of this great natural resource...Coordination and cooperation, not conflict and confusion.[21]

"Coordination and cooperation" had supposedly been a cornerstone of the Compact in 1935, but apparently the scope of cooperation with the Federal government has never been broadened beyond the scope of the Connally "Hot Oil" Act of 1935.

In 1947 Max W. Ball, Director of the Oil and Gas Division of the Department of the Interior, addressing a meeting of the Commission, congratulated the Commission on its work, assured it that the Federal Government did not seek nationalization of the oil industry, and was forced to return to the rostrum the following day to bitterly refute charges of a nationalization movement in Washington made after his initial address.[22]

It is possible to indicate here little more than

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[21] Carl A. Hatch, "Control and Development of the Public Lands," ibid., III:4, July 1944, pp. 12-16.

[22] Max W. Ball, "Remarks," ibid., VI:2, August 1947, pp. 49-52.

scattered impressions gained from a close study of the operations of the Compact, its history, and its publications. This body itself is a dominant enough political force to warrent a full scale study with a view to discerning the syndicalism involved in its design and functions.

The economic basis and intent of the Compact is essentially the free enterprise system and its preservation. It represents a major alteration in the basic concept of free enterprise for the Compact has collectivized rugged individualism. The petroleum industry discovered through its particular trial by fire that it could not survive on a capitalistic basis without limiting the freedom of action of its component parts. Under the stress of a competition that rode roughshod over Adam Smith's "Invisible Hand," rugged individualism had nearly destroyed itself.

By virtue of the organization that resulted from the resuscitation of free enterprise in the petroleum industry, rugged individualism became the ward of the state. The result has been to broaden the economic base of the State's Rights movement.

CHAPTER VII

OIL CONSERVATION IN NEW MEXICO PRIOR TO 1935

New Mexico's petroleum industry had its origins in the blood-letting days of rugged individualism in the neighboring states of Texas and Oklahoma. Although oil strikes during and following 1927, the year of the Hobbs Pool discovery, were characterized by flush pools as fabulous and prolific as any found elsewhere, New Mexico managed to escape the orgies which characterized East Texas and Oklahoma City. Instead, a network of voluntary agreements among producers in the various oil pools grew up to forestall the production of oil in a manner which would be economically wasteful.

When the production of oil had reached economically disastrous proportions in Texas and Oklahoma, the governors of these states utilized the National Guard to enforce their orders retarding production. In a manner, the states were in those instances taking the lead in moving toward petroleum conservation. The situation in New Mexico must be contrasted with this for here the industry took the initial steps leading to the formation of present-day conservation theories and techniques.

The intervention and influence of industry in the evolution of the principles and legislation involved has been even more marked than elsewhere. This history is a striking illustration of the impact of the concept of private

property upon the concept of the public interest held by the State administration. It demonstrates the manner in which the welfare and best interests of the whole body politic have become confused with and considered to depend upon the welfare of a special interest.

The vortex of the background and development of oil conservation in New Mexico has been the Hobbs Pool in Lea County in New Mexico's southeastern corner. The discoveries in this pool heralded the arrival of large producers and an oil industry of major proportions in New Mexico. From this springboard, the oil corporations spread to other and richer pools in the region. The development of early conservation techniques traveled the same path and the organization of the various oil interests into a unitary political force in the State spread from this point.

Prior to the discovery in the Hobbs pool, the only development of significance had been in the Artesia field in northern Eddy County. Exploitation began here in 1924.[1] However, this had traditionally been the site of operations for the independent producers. The oil is nearer the surface

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[1] Hiram M. Dow, "Legal History of Conservation of Oil and Gas in New Mexico," A Legal History of Conservation of Oil and Gas, A Symposium, Section of Mineral Law, American Bar Association, ed. by Walter L. Summers (Baltimore: Lord Baltimore Press, 1938), p. 103.

here so that a smaller investment is required for development.[2]

The development here prompted the Seventh Legislature to establish, in 1925, the office of State Geologist since a great part of the exploitation was on State land. He was appointed by the Governor but placed under the office and direction of the Commissioner of Public Lands, also an elective official. The scope of both his power and discretion was broad for he was authorized to prescribe and enforce regulation for the drilling, casing, and abandonment of wells and to take steps to prevent waste of oil and gas. His powers extended to private as well as State land. In addition the Legislature provided that the basis for his orders should be recommendations promulgated by the United States Bureau of Mines.

The administrative machinery devised to carry out the code thus developed was as strange and awkward as the heirarchy encompassing the office of the State Geologist. It was his responsibility to supervise the administration of his orders on State land. The responsibility for enforcement of regulations on private lands fell to the county commissioners who appointed county oil and gas inspectors

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[2] Robert L. Bates, The Oil and Gas Resources of New Mexico (2d ed.; Socorro: State Bureau of Mines and Mineral Resources, 1942), p. 167.

approved by the State Geologist. Their wages were set at fifteen dollars per day for the time spent in performing their duties, but they were paid by the owners or lessees of the properties they inspected.[3]

The State, after establishing this paragon of disorganization, potential confusion and inefficiency, ceased its attempts at further regulation of the industry until 1935. It was not until the period between 1927 and 1931 that the major producers began to arrive in New Mexico and, when they did, they assumed the lead.

The first discovery in the Hobbs Pool was made in June of 1928 by the old Midwest Refining Company, (now the Stanolind Oil and Gas Company) a subsidiary of the Standard Oil Company of Indiana. The initial well was rated at an average daily capacity of approximately 700 barrels, nothing extraordinary, and small by comparison with some of the wells just across the border in Texas. The discovery did not even stimulate sufficient interest to bring a single other wildcatter into the area.

The following year, the Humble Oil and Refining Company, of which the Standard Oil Company of New Jersey owns 72.13 percent of the stock, was required to do development work on a government lease it held three miles northwest

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3 Dow, op. cit., pp. 103-105.

of Midwest's strike, or forfeit the lease. In January of 1930 a well was brought in on this tract and over a twenty-three-day period produced a daily average of in excess of 7,000 barrels. Within less than a year, 141 wells had been completed in the pool. The Atlantic Refining Company, the Humble Oil and Refining Company, and the Shell Oil Company within a few months brought pipe lines into the field and by April 30, 1930, Hobbs had a rail connection.[4] The field, part of which is directly under the town of Hobbs, spreads over an area of a little more than 10,000 acres.

At the time of the discovery, Hobbs was nothing more than a wide place in a wagon trail. Lea County had been the exclusive province of the cattle barons and all the land there was classified by the State as grazing land. An interesting by-play between the cattle and petroleum interests evidently now began to develop which influenced the future development of conservation in New Mexico.

Prospecting and drilling for oil involved the utilization of heavy equipment, construction of storage and other facilities, and the drilling of test holes at several spots in the area where petroleum is suspected to be present. The combination of all these is bound to have a detrimental

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[4] Bates, op. cit., pp. 220-221.

effect on at least a part of the ground cover in an oil field. The closer the wells are to one another, the more equipment is hauled over a given area, the more frequent are the test holes, and the more concentrated are the various types of facilities. The cattlemen feared that ultimately there would be either no room left for grazing in that section of Lea County, and possibly others, or that the land would be so churned up by the search for petroleum that it would be several years before it once more supported vegetation and grazing.

In Lea County there are vast amounts of private and State land and a somewhat smaller quantity of Federal public domain. The Hobbs discovery had been made on land that was privately held. Leases could be worked out on a semi-bargaining basis with private landholders, but the State and Federal governments could be expected to impose uniform requirements upon those with whom they dealt. The State had, heretofore, been dealing with only independent producers but the majors might want to branch out. The cattlemen were one of the most powerful influences in Santa Fe at the time. On the basis of all this the oilmen evidently paused and decided that they would make themselves more welcome in the State by striking an understanding with the cattle interests. It was more upon the basis of this desire to avoid the

potentialities of what was almost an open fight with the cattle interests than upon a search for a basic conservation policy that developed the famous forty-acre unit spacing plan which makes New Mexico unique among oil producing states. The pattern has been a distinct advantage in the administration of conservation in the State, but it has contributed as much to and is grounded as thoroughly in conservation of grazing land as petroleum.[5]

The adoption of this spacing pattern has been facilitated by the population vacuum which characterizes the southeastern section of the State. Applications to the Oil Conservation Commission for an unorthodox location because of population factors are a rarity to the Oil Conservation Commission.

The latent dispute with the cattle interests had provided a unifying force among the oilmen. They were faced with a problem that could be solved only by uniform and combined action and agreement throughout the industry regardless of whatever competition might exist between them under other conditions. The rapid and fruitful development of the Hobbs Pool was soon to provide them with another.

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[5] I am indebted to Roy O. Yarbro, State Oil and Gas Inspector, Hobbs, Justin Newman, State Oil and Gas Inspector, Artesia, and George Graham, Assistant State Attorney General, Public Land Commission, Santa Fe, for much of the information and background on this point.

Although facilities had been rapidly developed at Hobbs in 1930 for the transportation of produced crude oil, they were by no means adequate to the potential full production of the field had its wells been produced "wide open," i.e. each on a twenty-four-hour daily basis at capacity flow. The pipeline and rail facilities could not even begin to handle such a flood of oil as this. Some of the field's wells were capable of producing over 20,000 barrels of oil daily. Furthermore, storage facilities would have been of the rudest and most inefficient type if they were to be constructed at a pace to enable handling of the crude that could not be carried away.

It was this situation, combined with the plunge of the oil market that led to the development of a voluntary agreement plan in the Hobbs Pool to restrict production. As has been noted before, it amounted to a division of the available market (capacity of transportation facilities serving the field) among the producers in the field upon the basis of the potential production of their wells. Within the industry, this was technically known as "proration." Its practical effect was to limit the production of some wells to as little as five hours weekly flow of petroleum. Naturally, the restricted rate of production resulted in favor of conservation of the resource in the pool.

However, there was the possibility that such an agreement as this might be challenged on the grounds that it acted in restraint of trade and was made with that intent. The charge ultimately arose in a litigation in Federal court in 1932, but this is a little ahead of the story.

The Ninth Legislature, meeting in 1929, passed an act (Chapter 132, Laws of New Mexico, Ninth regular session of the Legislature) exempting such agreements from the State anti-trust laws. Dow[6] states:

> The law sanctioned agreements made in the interest of conservation of oil and gas and the prevention of waste between and among operators owning separate holdings in the same pool, and provided that such an agreement would not be construed to violate any State statute relating to monopolies or contracts and combinations in restraint of trade. Proration was not mentioned specifically, but without doubt was within the intent of the law. All such agreements were required to have the approval of the State Geologist in order to be legal. The Commissioner of Public Lands was authorized to join with the operators in such agreements in pools or areas that included State lands when in his judgment the best interest of the State would be served thereby. (Italics supplied.)

It should be noted that this act was passed subsequent to the first, or "not-so-interesting" discovery in the pool by the Midwest Refining Company, but prior to the more stimulating strike by the Humble Oil and Refining Company in January of 1930.

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6 Dow, op. cit., p. 106.

An organization known as the Hobbs Pool Proration Committee was formed to draw up and administer the first agreement made under this law. The proration plan devised by it was put into effect in June of 1930 and was approved by the State Geologist and the State Land Commissioner the following month.[7] Dow[8] places the initial date of operation as July 10, 1930, or slightly more than two months following the extension of transportation facilities to the pool and about six months after the sensational Humble discovery.

Glenn Staley, who held the office of State Geologist under New Mexico's last Republican administration, is generally credited with forming the Hobbs Pool Proration Committee.[9] Following its formation, he became the first secretary of the Committee and has been associated with it since that time in the same capacity. His function is that of acting as the proration umpire of the group.[10]

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[7] T. A. Morgan, "The Administration of Gas-Oil Ratio Limitations, A Summary Report," The Interstate Oil Compact Quarterly Bulletin, VI: 3-4, December 1947, pp. 100-101.

[8] Dow, op. cit., p. 107.

[9] An address by R. R. Spurrier, State Geologist, delivered at the April 2, 1948, meeting of the New Mexico Society of Professional Engineers, University of New Mexico, Albuquerque, New Mexico.

[10] Interview with William Vaughan, Chief Clerk of the Proration Office, Lea County Operators Committee, Hobbs, New Mexico, December 9, 1948.

Incidentally, Mr. Staley states that the Committee was formed "immediately following the discovery of the Hobbs Oil Pool by the Stanolind Oil and Gas Company (formerly Midwest Refining Company) and the Humble Oil and Refining Company."[11]

The agreement was renewable every year, and at the end of the first year of its operation the Chamber of Commerce of the Town of Hobbs lodged a strong protest against its continuation with the State Land Commissioner. It was alleged by this group that the agreement would "(a) curtail wildcatting, (b) curtail the drilling and developing of potential oil areas in New Mexico, and (c) keep the price of crude oil down."[12] Evidently the Land Commissioner did not consider the protest to be possessed of any considerable amount of logic for he renewed the agreement with little hesitation.

The protest of the Hobbs Chamber of Commerce was only a portent of what was to follow. The following year the collectivized individualism of the Hobbs Pool collided with a potentially more explosive situation. On April 13th, a

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[11] Correspondence with Glenn Staley, Secretary, Lea County Operators Committee, Hobbs, New Mexico, January 31, 1949.

[12] Dow, op. cit., p. 107.

suit was filed in State District Court at Roswell by the Hobbs Townsite Company against the Midwest Refining Company, which challenged the legal basis of the Hobbs Pool proration plan. Since the Midwest Refining Company was a foreign (non-New Mexico) corporation, the case was removed to Federal District Court upon motion of the defendant and was heard in a jury trial before Judge for the District of New Mexico, Colin T. Neblett.[13]

Midwest Refining Company had leased certain properties in the Hobbs Pool from the Hobbs Townsite Company for the purposes of petroleum development. Included in the lease was a provision for payment of a royalty amounting to one eighth of the value of the production of oil from these lands.[14] Only one well had been developed by the Midwest Refining Company on this land, but it was alleged by the plaintiff to be capable, on the basis of test runs, of producing 889.65 barrels of oil an hour or more than 21,000

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13 Hobbs Townsite Co. v. Midwest Refining Co., U.S. District Court for the District of New Mexico. Filed with Clerk of the Court at Santa Fe, New Mexico, Action 2478 Law.

14 The action was later amended by the plaintiff to change one eighth to one sixty-fourth. The amendment was based on a decision in favor of the defendant in Hobbs Townsite Co. v. Hobbs by the State Supreme Court in 1934 which had been brought earlier on the title of Hobbs Townsite Co. to the land involved in the dispute with the Midwest Refining Company.

barrels daily. This well was completed on January 20, 1931. Since Midwest Refining Company was a member of the Hobbs Pool Proration Committee and operating under its plan, the production of the well had been accordingly restricted. Hobbs Townsite Company charged that, on the basis of the prevailing market prices over the months between January 1931 and April 1932, it was entitled to $554,602.07 in unpaid royalties and demanded full compensation. Even for the Standard Oil Company of Indiana it must be admitted that this was a considerable sum of money.

Midwest Refining Company's defense was that it had exercised the reasonable diligence required of any lessee in developing petroleum properties. It based its argument on the physical characteristics of the resource and introduced those facts into the testimony of the case. Hobbs Townsite Company denied that this was all that could be considered under the heading of reasonable diligence and argued that:

> ...in considering the question of reasonable diligence, the proximity of the market, the demand for oil or condition of the market, the means of transportation, or the price of oil, or the useages of the oil business must be taken into consideration...(and that)...where a commodity, such as crude oil, has a market or posted value, as admitted by the Defendant, that the only circumstances that may be considered as to whether such reasonable diligence has been used in producing oil is whether the same can be produced at a profit to the lessor and lessee.

Midwest Refining Company replied to this agrument by stating that the oil could not be transported with existing facilities and that even if it could have been carried to market, it could not have been sold, at least not at a profit. The plaintiff denied this and said that if Midwest had really wanted to market the oil it could have transported it by rail, although the former really believed that the pipe line facilities were capable of handling the full capacity production of the Hobbs Pool. Furthermore, even if the oil could not be carried away, the defendant should build storage facilities for the oil and hold it until the market was right since the production of other wells in the pool was draining the potential out from under the Midwest lease. It was also charged that the Standard Oil Company of Indiana was responsible for the condition of the market because it was purchasing crude from other sources, both foreign and domestic, inducing overproduction elsewhere, drilling wells in Texas, Kansas, and Oklahoma, and taking up leases in other pools where there was no restriction on production. Finally, said Hobbs Townsite, the Midwest Refining Company had lowered the value of the oil produced in the Hobbs Pool by permitting it to be transported through the same pipe lines as oil produced in West Texas and that it had become polluted by being mixed with the Texas petroleum.

The Lone Star State and all of its varied and assorted Chambers of Commerce indulged in the Century's most remarkable restraint denying themselves the luxury of a customary Texas rebuttal.

Hobbs Townsite Company attacked the legality of the agreement on three points. It charged that the intent of the agreement was to fix the price of oil by limitation of sales and not to divide the market fairly among the producers in the field. Actually, they alleged, it was a device for the restraint of trade and violated the anti-trust laws. Proration they claimed, was a device entered into by the Standard Oil Company of Indiana, other oil producers and the several states with the intent of restricting the production and price of crude oil from the lands of the plaintiff. Finally, they charged, the agreement had no validity under the laws of New Mexico since it was entered into by Midwest Refining Company prior to passage of the permissive act by the Ninth Legislature, or within the six months subsequent to the original discovery in the Hobbs Pool.

The case dragged on for nearly two years and resulted in a finding by the jury in favor of the plaintiff, Hobbs Townsite Company, but the damages awarded them were phenomenally reduced to the sum of $800. Judge Neblett, a rather taciturn magistrate, limited his instructions to the jury

to about 200 words, giving little hint of the legal complications involved or precedents that would flow from their finding. Throughout the trial and the various motions filed during its course he had severely restricted his opinions to a few sentences. Thus the file of the case gives little, if any, clue to the findings of fact or law on the charges involved. The results of this case must have left the mind of the court very obscure from the viewpoint of the bar and the oil companies. However, the decision itself left the door open to a flood of similar suits by other landowners in the oil producing areas of the State. The traditional lassiez-faire concept of rugged individualism seriously endangered the new theory of collectivization of free enterprise.

However, the small return involved in decision to the plaintiff may have forestalled, temporarily, the bringing of other suits. The labor of two years litigation was hardly worth $800 over court costs. The far more dangerous possibility was that behind the decision lurked the threat of anti-trust prosecution which might abrogate the still-intact proration program. Nothing could be done at the state level until the Legislature convened in 1935 to place further bars in the path of a threatened flood of lawsuits and criminal prosecutions.

Perhaps it was the trend of events outside of the State in 1934 that forestalled such an onslaught. At any rate, their culmination at Dallas in February of 1935 resulted in legislation in New Mexico which secured the future of the State's infant oil industry and projected the protection of collective special interest into the realm of conservation and the protection of the public interest.

CHAPTER VIII

OIL CONSERVATION IN NEW MEXICO

SUBSEQUENT TO 1935

New Mexico entered upon the present, or second phase of oil conservation in 1935. It has been characterized by direct intervention of the State in the promulgation of conservation policies as contrasted with the situation prior to that year when industry dictated its own program.

Before proceeding to the development of this period it should be noted that in 1934 proration of petroleum production under the plan of voluntary agreements was extended to the Jal and Eunice fields in Lea County. These pools had been discovered in 1928 and 1929, but production did not reach major proportions until about 1934. The State Geologist and operators in the area had, at the time large scale drilling began, arrived at a spacing agreement based on the forty acre-unit.[1] The proration plan, therefore, was becoming more popular with the producers in the State. Under the then existing legislation it could soon be expected to extend to most of New Mexico's major producing areas.

But the continued life of the Hobbs Pool and other proration plans was now in danger and the possibility of return to the old rule-of-capture competition was a distinct reality. Market facilities in Lea County were still far too insufficient to handle the potential flood of full production

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[1] Bates, op. cit., pp. 201, 207.

and vast amounts of physical and economic waste could be expected to result under such conditions.

The growth of the voluntary agreements plan and the threat of its death, the increasing known oil potential of New Mexico, and an increasing knowledge and appr8ciation of the principles of conservation brought to both the State and the industry a harmony of interests and a desire to discover another method of continuing the substance of past limited production practices. The philosophy of each in this regard was somewhat different from that of the other. A return to past practices would mean economic ruin for the industry, but for the public at large, it would spell the hastening of the day when the resource would be exhausted. For New Mexico itself, it meant the failure to develop fully vast amounts of one of her most valuable assets.

In some respects the public interest is similar to that of the oil industry itself as regards petroleum. A resource is of no value to either industry or the public while it remains undeveloped in the earth. Both demand that it must be developed to serve the cause of their advancement. However, the public interest demands that the development be sane and orderly so that the resource will last a longer time thus benefiting a larger segment of society. But the philosophy of private enterprise dictates

that the industry operate to benefit itself and the practice of competition shortens the segment of time to be served in the private interest to the immediate. The experiences of 1930 and 1931 forced upon the oil industry a realization that it could stand only a certain amount of compression of this segment of time, for in those years it had become too compressed. Basically this involves the question, earlier discussed, of physical versus economic waste of the resource. The interest of the industry and the State, therefore, varied on the question of conservation only as much as the difference between these two principles.

States signing and ratifying the Interstate Oil Compact drafted at Dallas in February of 1935 were bound to enact oil conservation statutes, if they had none, "within a reasonable time."[2] New Mexico, one of the original states involved in the formulation of the Interstate Compact, was the first state to ratify it by legislative action on February 25th, less than ten days after its adoption in Dallas. The next task of the Twelfth Legislature was the enactment of the conservation statute required by the Compact. This involved the decision, left to the states by the Dallas conference, of whether or not New Mexico was to ground its

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[2] Article IV, Interstate Compact to Conserve Oil and Gas.

conservation program in the principle of prevention of physical or economic waste.

Between fifteen and twenty lawyers and oilmen were in the group that drew up the basic conservation statute for the State. Among these was J. O. Seth, now one of the deans of the bar in New Mexico. He had been associated with the petroleum industry in New Mexico since 1932-34 when he helped represent the Midwest Refining Company in the suit lodged against it by the Hobbs Townsite Company. The two principal drafters of the bill presented to the Legislature were Seth and Robert E. Hardwicke of Fort Worth, Texas, a corporation lawyer and authority on such legislation.[3] The bill was introduced by Senator H. G. Watson of Artesia. Spurrier[4] says that this action followed "long and due consideration of conservation statutes, that is to say, oil and gas law, during which oil company attorneys considered carefully the laws pertaining to oil and gas in other states."

But the necessity of a compromise arose within the Legislature itself over the question of the principles of conservation on the basis of prevention of physical and

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[3] Interview with George Graham, Assistant State's Attorney General, Public Land Commission, Santa Fe, New Mexico, October 28, 1948.

[4] An address by R. R. Spurrier, State Geologist, delivered at the April 2, 1948 meeting of the New Mexico Society of Professional Engineers, University of New Mexico, Albuquerque, New Mexico.

economic waste. Seth says that there were several points of view on the matter in regard to the whole question of oil conservation as well as its assorted ramifications and implications. The problem of the industry interest group was to somehow compromise all of these points of view before the bill reached the floor of the Legislature. Not much time remained before the close of the session and a disruptive debate in the Legislature could easily have forestalled passage of the act at the 1935 session and might even have produced antagonisms that would have prevented the adoption of such legislation for several years to follow. This eventuality was averted with singular success, in view of the opposition mentioned by Seth, for the basic act passed both houses of the Legislature without a dissenting vote.

The basic act itself recognized both the principles of economic and physical waste, thereby shifting to the shoulders of the administrative body created to supervise the law's enforcement the decision of which principle was to be adopted. Waste was reduced to two categories, that of "underground waste," which was, by definition, strictly physical waste involved in the development and exploitation of petroleum, and "surface waste," which was physical waste after the petroleum had been taken from the earth, plus economic waste. Economic waste was not specifically mentioned

but "loss or destruction without beneficial use...from the production of crude petroleum oil in excess of the reasonable market demand," could hardly be taken in any other light. In addition, "reasonable market demand" was defined as:

> ...the demand for such crude petroleum oil for reasonable current requirements for current consumption and use within or outside the state, together with the demand for such amounts as are reasonably necessary for building up or maintaining reasonable storage reserves of crude petroleum oil or the products thereof, or both such crude petroleum oil and products.[5]

The Act further stated that reasonable market demand could be based either on figures provided by the United States Bureau of Mines or "any bureau or agency under an interstate compact to which the State of New Mexico is a party."[6]

At the time the former agency was furnishing such figures and has continued to do so. Since its creation, the Economics Advisory Committee of the Interstate Oil Compact Commission has published a similar quarterly report and this is generally prepared in cooperation with the Independent Petroleum Association of America. The United States Bureau of Mines forecasts are on a monthly basis at the present time.

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[5] N. M. Laws 1935, c. 72, Paragraph 2; N. M. Stat. Ann. c. 69, art. 2. (1941).

[6] N. M. Laws 1935, c. 72, Paragraph 16.

The agency established to administer this Act is the Oil Conservation Commission, a three-man board consisting of the Governor, State Land Commissioner, and State Geologist. The latter officer is appointed by the Governor, serves at his pleasure, is directly responsible to him, and acts as Secretary of the Commission. The function of the Commission is to hold hearings, promulgate, issue, and enforce orders for the conservation of oil and gas. It is granted broad powers for this purpose being given

> ...jurisdiction and control of and over all persons or things necessary or proper to enforce effectively the provisions of this Act or of any other law of this state relating to the conservation of oil and gas.[7]

The orders are to be issued by the Commission in open hearing. These are usually held in Santa Fe following ten days legal notice by publication in the State press.

Perjury with the intent of violating the Act is punishable by a fine of not more than $1,000 or three years imprisonment or both. Violation of the Act or the orders or regulations of the Commission is punishable by a fine of not more than $1,000 per day for each day of the violation. Such fines are to be recovered by suits in the name of the Commission. Oil which is illegally produced is to be

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[7] Ibid., Paragraph 4.

impounded by the State and sold in a manner directed by the court with the proceeds over expenses of sale being paid into the common school fund.[8]

For the support of the Oil Conservation Commission and its necessary activities, a tax of one eighth of one percent is levied on the proceeds of all oil and gas produced in the State, over and above royalties paid to New Mexico or the United States. This is paid to the State Treasurer and converted into the oil conservation fund by him.[9]

The operation for nearly five years prior to passage of the Act under a system of voluntary agreements administered by the industry itself in several of the State's richer oil fields had established certain traditional practices, procedures, and engineering principles with regard to the development of petroleum. Establishment of an administrative agency with such broad powers gave rise to the possibility that this body of procedure might be drastically altered if the Commission happened to get into a cantankerous mood. Accordingly, the basic act included a provision which acted as a negative bar to the eventuality. It stated that:

> Whenever it appears that the owners in any pool have agreed upon a plan for the spacing of wells,

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[8] Ibid., Paragraphs 20, 22, and 23.

[9] Ibid., Paragraph 25.

> or upon a plan or method of distribution of any allowable (Production) fixed by the commission for the pool, or upon any other plan for the development or operation of such pool, which plan, in the judgment of the commission, has the effect of preventing waste as prohibited by this act and is fair to the royalty owners in such pool, then such plan shall be adopted by the commission with respect to such pool; however, the commission, upon hearing and after notice, may subsequently modify any such plan to the extent necessary to prevent waste as prohibited by this act.

The judgment of the commission was the only uncontrollable factor which could bar the way to uninterrupted continuation of the Hobbs Pool Proration Plan and it, naturally, was subject to the influence of a logically presented argument. The task of the Hobbs Pool Proration Committee had been made considerably easier.

By 1936 the Hobbs Pool Proration Committee had grown until it included very nearly all of the producers in Lea County. This, in effect, meant that all of the major producers in the State were represented in the organization. Accordingly, its name was changed to the more representative title of the Lea County Operators Committee. Its influence was to be commensurate with its popularity in the industry.

The conservation statute had bound the budget of the Oil Conservation Commission to the fortunes of the State's oil industry. In 1936 it was still comparatively small in terms of both size and value of production. Consequently,

the budget of the Commission was small, its staff limited, and the scope of its activities held to a scanty realm. If oil conservation in New Mexico was to become effective and efficient, the personnel of the Commission had to be supplemented. The Lea County Operators Committee was the logical choice to be the good right arm of the Commission since it was an established and cohesive body familiar with the problem at hand and held the respect of the industry as well.

Therefore, immediately subsequent to its formation the Oil Conservation Commission adopted the orders already promulgated by the old Hobbs Pool Proration Committee and extended them to all of the producing areas in the southeastern corner of the State. Secondly, it established a close liaison with the Lea County Operators Committee and assigned to it the function of issuing the monthly proration schedule for the State.

During the fourteen years of its life the Commission has formalized an elaborate system for the drilling of wells in the State. A permit is required for the drilling of the well and the exact location of the proposed hole must be given. Although the spacing pattern is one well to every forty acres, the driller is allowed a certain amount of leeway in location. He cannot drill closer to the boundary

of the forty acre tract than 330 feet from its boundary line. The area remaining approximates the center ten acres of the tract.

A complete set of forms has been developed to record the history of the well from the moment the permit for it is granted until it is plugged. In addition, the operator is required to file with the Commission a duplicate of all tests he runs on the well both prior and subsequent to the time he strikes oil and begins production. All of these forms and other information is processed by the Commission's district offices at Artesia, for Eddy and Chaves Counties, and Hobbs, for Lea County.

The basic act has been amended three times since its passage in 1935. The first of these came in 1937 when the authority of the Commission was extended to include the regulation of the production of carbon dioxide gas. The second was passed at the 1941 session of the Legislature and required ratable purchase of oil, i.e. purchase proportional to the production of the various wells and from each of them. This latter amendment was passed as a result of heated charges by the independent operators in the Artesia region of discriminatory purchase of crude petroleum by the pipe line operators.[10]

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10 Ross L. Malone, "New Mexico, 1938-1948," Conservation of Oil and Gas, A Legal History, 1948, ed. by Blakely M. Murphy (Chicago: Section of Mineral Law, American Bar Association, 1948), pp. 313-314.

The Nineteenth Legislature extended its functions to the control of natural gas production in the State and this is to become effective on July 1, 1949.

Conservation is only half-hearted if it is merely limited to prevention of waste. The public interest is better served by applying to the production of oil positive practices and methods designed to increase the pool potential to, and, if possible, beyond the limitations nature imposed upon it. The first of these ends is accomplished by unitization, the latter by the application of secondary recovery practices.

A forty-acre spacing on the surface of the earth bears no logical relation whatsoever to the underground characteristics of the oil pool. Within the area embraced by the pool, the geologic structure provides only a limited number of spots at which a well may be located with the hope of obtaining the greatest potential production from the whole field. In other words, the pattern of location should ideally correspond to the three-dimensional rather than the two-dimensional limits and features of the pool. Unitization is the process of placing wells at the most advantageous spots in the pool with regard to its geology and permitting no others. The royalty owners in the pool then divide among themselves the proceeds of production

according to the proration of their holdings.[11] New Mexico currently has two unitization projects, the Langlie and South Maljamar fields both located in Lea County.[12]

Secondary recovery involves restoring lost energy to the oil reservoir in order to bring to the surface the commercial residue remaining below the ground. The pressure characteristics of various pools are different and, even under controlled production, secondary recovery, either by gas injection or water flooding, may be necessary at different comparative stages of the pools' lives. In pools where production has proceeded at a reckless and haphazard rate, secondary recovery is generally necessary earlier by comparison than in carefully regulated pools.[13] New Mexico has no program of secondary recovery, although the State Geologist recognizes the need for this type of project and its efficacy. The main obstacle to institution of the program is the need for a vast research program, estimated to

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[11] Dorsey Hager, Fundamentals of the Petroleum Industry (New York: McGraw-Hill Book Co., 1939), pp. 95-95, 126-127, 287, 370.

[12] Jack K. Baumel, "Research and Coordinating Committee Report," Interstate Oil Compact Quarterly Bulletin, VI: 3-4, December 1947, pp. 92-96.

[13] Lester Charles Uren, A Textbook of Petroleum Production Engineering (New York: McGraw-Hill Book Co., 1924), pp. 417-423.

cost $30,000 annually, in order to determine what methods of secondary recovery are technically proper and desirable under local conditions. The Legislature had not sufficiently perceived the wisdom of the plan, thus far, to appropriate the necessary funds for investigation by the Commission. At present, there is a large pressure maintenance project underway in the Maljamar pool, and several smaller programs, as well, but these are described as only an approach to the problem.[14]

The chief function of the Oil Conservation Commission is the monthly allocation of production among the various wells in the State. On the first and sixteenth of each month, the Oil Conservation Commission is supplied with a market forecast by the Bureau of Mines of the United States Department of the Interior. The schedule advises the Commission on the amount of crude petroleum New Mexico can market for the succeeding two weeks to meet demand on the basis of prevailing conditions. Once he receives this figure, subject to only slight fluctuations over months-long periods, the State Geologist, Richard R. Spurrier, usually telephones the Chief Clerk of the Lea County Operators Committee, William Vaughan. Mr. Vaughan has in his possession the latest

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[14] Richard R. Spurrier, "New Mexico," Interstate Oil Compact Quarterly Bulletin, V: 3-4, December 1946, p. 54.

information on all the oil wells in the State's only prorated counties, Chaves, Eddy, and Lea. On the basis of the facts at hand, Mr. Vaughan estimates for Mr. Spurrier the advisable "top allowable," or base-point, production figure for the State for the coming month. On the basis of this information the Commission then goes into executive session, sets the "top allowable" production figure for the State and issues an order to that effect. This order assigns to each well in the State a production of, for example, forty-three barrels of crude daily.

Once the order is issued by the Commission, it becomes the function of the Lea County Operators to adjust the production figures between the wells and issue the monthly proration schedule. It is issued under two covers, one for Lea County and the other for Eddy and Chaves Counties. The Lea County Operators Committee prints, assembles, and distributes the schedule, one to each operator, and bears all the costs involved.

Four factors are taken into consideration in the adjustment of production figures. Some wells in the State are not capable of meeting the daily "top allowable" production. These are the marginal wells. Consequently, they are allowed to produce to capacity and the difference between their production and the "top allowable" is reapportioned among the rest of the wells in the State. The total daily "top

allowable" production less the total production of the marginal wells is then divided by the number of non-marginal forty-acre producing units in the prorated region. This figure is then adjusted on an individual well basis. Some wells require a greater expenditure of energy to produce one barrel of oil than others. Since the principle of conservation is to hold down the expenditure of energy, a gas-oil ratio adjustment is made in order to bring the expenditure of energy among the wells into equity. A further adjustment is made on the basis of depth. For wells deeper than 5,000 feet, the allocated "top allowable" production is multiplied by a proportional factor. It is increased for each thousand feet of depth below 5,000 and ranges as high as 6.75 for a well 12,000 feet deep. The scale is uniform for all prorated production.[15]

The Hobbs and Monument pools are special cases in the proration program, having an intrapool factor applied. Here the allocation is based twenty percent on acreage (producing units) and eighty percent on the pressure of the energy force at the bottom of the well.

In November of 1948 at a meeting of the American

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[15] Interview with William Vaughan, Chief Clerk of the Proration Office, Lea County Operators Committee, Hobbs, New Mexico, December 9, 1948, and R. R. Spurrier, State Geologist, Oil Conservation Commission, Santa Fe, New Mexico, January, 1949.

Petroleum Institute, it was commented by Edgar Kraus, of Atlantic Refining Company, that:

> ...although the proration system (in New Mexico) may not be so well designed from an engineering standpoint as might be desired, it has proved to be satisfactory to the operators. Its automatic feature has made it possible for each operator to calculate what his allowable will be, and the depth allowable has encouraged the exploration for and development of deep production.[16]

When all of the calculations are completed, the production figure for the month very nearly approximates the "top allowable" recommended for the State by the Bureau of Mines. The Lea County Operators Committee and the Oil Conservation Commission have a three-way check on the producers. Not only are they required to report their production; the pipe line companies are required to report the amount they transport from each well and the buyers are required to submit a report of their purchases.

The Conservation Commission maintains three field offices; one at Farmington to keep the expanding San Juan Basin area under surveilance, one at Artesia, and the office of the State Oil and Gas Inspector at Hobbs. Justin Newman is in charge of the Artesia office of the Commission and

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[16] Edgar Kraus, "Factors Used in the Allocation of Production Among Pools and Within Pools," paper presented to a Division of Production Group session during the 28th annual meeting of the American Petroleum Institute in the Stevens Hotel, Chicago, Illinois, November 9, 1948.

describes his duties as being mainly those of gathering the news of latest developments in the oil fields and forwarding the information to Santa Fe. To accomplish this, he works closely with the oil company scouts who explore the fields once monthly and then meet to pool their findings the following day. Newman meets with them and assembles the pertinent information for the use of the Commission. The purpose of his function is to make sure that the operators are put on the tax rolls for whatever increased production or assets they may have. He is also a diplomat of sorts. The Conservation Commission, remembering the historic dispute with the cattle interests, as one of its first acts laid down a body of rules to protect the grazing lands in the oil region. Bad blood between the two interests is now a highly unusual circumstance, but when and if it arises, Newman must serve as either the peacemaker or, failing in this task, seek compliance by forcible means. This is accomplished by bonding all oil prospectors and exacting, in case of violations, a payment to the injured landowner of $1,000 daily for every day spent on his land.

The Hobbs office is under the direction of Roy C. Yarbrough who has been a resident of the town for nearly twenty years. He was both a wildcatter and a driller before becoming affiliated with the Conservation Commission. The supervision for the State of all oil drilling operations

in the region is his chief function. He has held his present position for the last ten years. He is assisted by a petroleum engineer.

Although the State's oil industry has been growing by leaps and bounds, the funds made available to the Commission for its operations have not kept pace with the value of production. Of the one eighth of one percent royalty allocated to it for its operations, the Commission has accumulated a surplus of nearly $100,000 dollars in the past three years. This is the result of the fact that the Legislature is required to transfer the earmarked revenue from the covered fund in the State Treasury to the Commission for its use. The Commission is required to submit a biennial budget to the Legislature for its approval. While the Legislature never makes any sweeping or drastic cuts, the proposed budget never approximates very closely the available revenue for the fiscal years it covers. In 1947 revenue from the special royalty totaled $64,493.42 while the appropriation was set at $41,719.80. For 1948 revenue came to $108,083.42 but only $64,954.39 was granted to the Commission. The present aspiration of Spurrier and his entire staff is to convert the surplus to a building fund in order to erect permanent and adequate offices for the Commission. It is now laboring under a space handicap and occupies several surplus Army barracks-type buildings.

Spurrier says he is not interested in using the total available funds for expanding his staff. It is now adequate to the task at hand, he believes, and points to his well cleared desk as the proof of the fact. Occasionally, it is necessary to hire one or two part time workers, but this is a rare circumstance. Generally, it numbers about fourteen for the Commission's four offices. The extension of the Commission's authority to the supervision to the regulation of natural gas will require the services of a gas engineer, but beyond that no staff increases are contemplated.

However this may be, the present staff limitations have thrown back upon the industry itself the performance of many vital functions properly belonging within the juridiction of the Commission. Mention has already been made of the function of the Lea County Operators Committee in the issuance of the proration schedule. One of the important factors in the determination of production is the gas-oil ratio. Up until about 1943 the Lea County Operators Committee ran these tests annually on all prorated wells in the State. By then the number of wells in New Mexico had increased so rapidly that even this agency was unable to perform that function. It was then turned over to the operators themselves, and is now performed by them. Each operator now tests his well(s) annually witnessed by two offset (adjacent competing) operators. They then prepare and submit

the customary report to both the Lea County Operators Committee and the Commission. According to the Lea Operators Chief Clerk, William Vaughan, "The test comes out right, unless the operators are in cahoots with one another."

The Lea County Operators Committee is also the main guiding force of the Commission. Of the more than 800 orders issued by the Commission to the oil industry during its fourteen years of life, only a handful have been initiated by the Commission itself. The result is that the orders of the Commission are more permissive than regulatory in nature, and it is historical fact that the industry is seldom denied. The procedure generally follows this pattern. Certain operators desire the authorization of the Commission to undertake a given procedure in the operation or location of their wells or surface facilities. They file a petition with the Commission, generally prepared for them by the Lea County Operators Committee. These are forwarded to Santa Fe and accumulate at the rate of six to ten per month. When the Commission feels it has sufficient business to justify a hearing, legal notice is given. These are held about once a month. Notification of a hearing is the signal for the Lea County Operators to meet and conduct their own hearing on the petitions up for consideration. They decide at this time whether or not they will support the petitioner,

virtually settling the fate of the request.

Former Governor John J. Dempsey became so accustomed to the smooth procedure of the Commission hearings that ensued as a result of this practice that, upon the occasion of one heated dispute before the Commission, he publicly expressed his surprise and disfavor and inquired as to the reasons for the difference of opinion since the Lea County Operators had presumably met the previous day. He gave vent to the hope that this would not happen in the future, whereupon the representative of one of the State's major oil companies felt moved to remind the Governor that he was merely exercising his constitutional right of disagreement.

Malone[17] comments that "Fair evaluation of the operations of the Oil Conservation Commission in New Mexico leads to the conclusion that if one is paramount, it is the industry." When the complete absence of court litigation over an order of the Commission or its legal basis is added to this observation, it would seem equally fair to conclude that the principle of prevention of economic waste has triumphed magnificently over that of prevention of physical waste in New Mexico. Whether the public interest has been more adequately served in terms of dollars and cents by

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[17] Malone, op. cit., p. 333.

this victory can be determined only after a thoroughgoing evaluation. Undoubtedly the public interest has benefited from the program of conservation that has evolved under the aegis of the petroleum industry, but the return has been secondary and incidental to the primary purpose of the industry's welfare.

No discussion of the control of petroleum lands in New Mexico is complete without discussion of the role of the Federal government. A considerable amount of production in New Mexico is on Federally-owned land.

The administration of all Federally-owned oil lands in New Mexico is under the direction of the United States Geological Survey, Conservation Branch, with headquarters offices for the State in Roswell. The purpose of its regulations is to gain from its lands the greatest possible and most equitable development of lands while recognizing that the conservation of petroleum is a matter falling within the police powers of the State. There are few major differences between the regulations of the Federal government and those of the State, although it is possible for the former to increase their stringency at its descretion. It may not, however, make its rules less stringent than those of the State. The United States Geological Survey recognizes that a dual system of proration of production would be most cumbersome

and almost impossible of efficient and equitable administration. Therefore, it requires the operators on its land to accept the State proration schedule.

The complicated land ownership problem in southeastern New Mexico forces a large measure of uniformity of State and Federal codes. In many of the prominent pools of this region adjacent sections of land are often held by the State, Federal government, and private royalty owners. The situation, therefore, is somewhat reversed from that of the potash fields with the influence of the Federal government and the State vying for prominence, although not consciously. The effect is incidental rather than premeditated.

However, the police power of the Federal government does enter positively into conservation in all states. This is by virtue of the Connally "Hot Oil" Act which prohibits the transportation in interstate commerce of petroleum produced in violation of state conservation codes.[18]

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[18] Interview with Foster Morrell, Supervisor, Conservation Branch, United States Geological Survey, Roswell, New Mexico, December 6, 1948.

CHAPTER IX

A BRIEF DISCUSSION OF SEVERANCE TAXATION OF MINERAL PROPERTIES

Taxation is a form of control of the economic life of the political unit within which it is administered. Although its objective is revenue raising in the majority of instances and not control, it is inconceivable that the impact of the tax structure should not in some way affect the private lives of the taxed and taxable units. A highly unfavorable tax structure can make the difference between profit and loss for given enterprises. It can drive the smaller concerns from the field if its weight bears too heavily. It can affect the rate of expansion of an industry by decreasing the funds available for the replenishment and maintenance of venture capital.

New Mexico is only now entering upon a period of thorough economic self-examination. There is little well-grounded information and nothing of a comprehensive nature establishing the effect of taxation in New Mexico upon the State's mineral industry. Thus, little more can be done here than to outline some of the more significant aspects of the tax structure as it applies to the State's mineral industry.

The most controversial of all tax questions concerning the mineral industry is the matter of depletion. It is a problem common to mineral interests everywhere regardless of the tax structure with which they deal.

The mineral companies put forth the argument that they

should have a flat percentage deduction on their taxes on the grounds that they are using up their capital assets, i.e. the mineral they are exploiting. Regardless of how much is in the ground when some of the deposit has been removed, just that much less remains. Presumably, then, the operation and the company conducting it is not worth as much as it was previously. Apparently, this condition could not be charged off to depreciation since Congress has included such exemptions in the present revenue act.

The potash interest waged a long and arduous fight for amendment of the act to extend its provisions to that industry.[1] They have now won the contest and are granted a twenty-seven and one half percent exemption. This is the highest rate of exemption under the act, the previous high having been granted to sulfur operations at twenty three percent.

The case for a severance tax, interestingly enough, follows the same line of reasoning. In New Mexico it is especially true because of the State's semi-colonial economic status. The argument presented is that the minerals in the soil of the State increase its value. When all of these resources have been removed from the State it is worth less than it was when they were in the soil. The mere exploitation

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[1] J. P. Hagerson, op. cit., p. 1.

of these resources and the natural economic advantages that accrue to the State as a result do not compensate the people as a whole for the removal of the minerals. The people should, therefore, receive an additional consideration for the removal of these resources. Presumably, if the State was to receive full consideration for their removal, the sum should equal the value of the minerals removed. Under present structures, the consideration is merely token.

Mineral interests in New Mexico, prior to the session of the Nineteenth Legislature were taxed at the rate of two percent for oil and natural gas, one percent for potash, and one eighth of one percent for coal, gold, lead, zinc, silver, copper, and asphalt.[2] They are also subject to property and sales taxes, but these are included in the same structure applicable to the rest of the State. The severance tax is based upon the net value of production.

During the opening days of the Nineteenth Legislature, the State administration dropped a few hints that it would support an increase in the severance tax to a flat three percent of the gross value of production. The strategy was to take the petroleum interests into camp in an effort to

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[2] E. P. Ripley, Compilation of State Tax Law Relating to Mineral Properties in New Mexico (Socorro: State Bureau of Mines and Mineral Resources, 1946), p. 10.

gain their support in increasing the tax on the metal interests to bring it into line with that of the oil industry. The price to be exacted from the oilmen for the removal of this discrimination was to be a one percent increase in their severance tax.[3]

The tax increase was first introduced in the Senate on February 4, 1949 by State Senator Tibo Chavez (D.) Belen, proposing a flat rate of three percent on the industry. Committee hearings began on February 16th, and it was almost immediately apparent that a reduction would be made in the original bill.[4] The charge was made that the tax was retrogressive, would hit the smaller operators very hard forcing them out of business. To eliminate this possibility the bill came out of committee with a provision for exemption of the first $100,000 of production. The rates had been changed with petroleum and potash still taxed at three percent, but all other taxes reduced to one percent.[5]

The arguments, in general, lodged against the tax were (1) that the mineral industry as a whole pays more taxes than any other group in the State, (2) the State didn't need the increase, since increased production resulting in greater

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[3] The Albuquerque (New Mexico) Journal, January 25, 1949.

[4] Ibid., February 17-18, 1949.

[5] The Albuquerque (New Mexico) Tribune, February 25, 1949.

payments at the old levels would meet the budget needs for the coming fiscal year, (3) profits would be wiped out in some cases, (4) the mineral industry was paying its "fair share" of the taxes under the old schedule, and (5) it would place higher levies on New Mexico's mineral industry than other states' tax laws on their mining interests.[6]

The large mining interests in the State, notably potash and petroleum, at no time during the debates or committee hearings introduced figures to demonstrate that they would be severely hurt by the increase. Their arguments were based on the contention that the increase was not needed, not that it would force them to take a loss on their operations.

While the severance tax increase was under consideration in Senate committee an impressive array of pleaders appeared to state the case for its defeat. Among them were representatives of the United Mine Workers and the International Association of Machinists apparently stimulated by the statements of industry leaders that if the increase was approved, several mines would either be operating on a non-profit or deficit basis and might close.[7]

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6 The Albuquerque (New Mexico) Journal, February 17, 1949, and March 4, 1949, and The Albuquerque (New Mexico) Tribune, March 4, 1949.

7 The Albuquerque (New Mexico) Journal, February 17, 1949.

By the time the measure had passed the Senate, it was watered down a little more. It then provided for a three percent tax on petroleum and potash, one percent on copper, one eighth of one percent (the old rate) on all others, and an exemption of the first $200,000 worth of production on all but oil and gas.[8] The Senate had earlier attempted to apply the $200,000 exemption on the oil and gas producers, but this was opposed by the New Mexico Oil and Gas Association.[9] The petroleum interests argued for no increase in the tax at all in lieu of the exemption. However, it may have been that the large oil companies did not want to see the smaller producers exempted completely from the severance tax which would have been the effect of the $200,000 exemption.

However, further compromise was in store for the tax increase. The administration next stepped into the picture, following a blunt castigation of the potash industry's lobbies by Governor Mabry for actively opposing the increase. Revenue Commissioner Victor Salazar announced a few hours later that a bill satisfactory to all parties concerned had been reached. This lowered the tax on petroleum and potash to

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[8] Ibid., March 8, 1949.

[9] The Albuquerque (New Mexico) Tribune, March 4, 1949.

two and one half percent, extended the $200,000 deduction to both, set the rate on copper at one half of one percent, and left all other natural resources at the old level, one eighth of one percent.[10] Before passing the House, the $200,000 exemption was extended to all mineral industries in the State.[11] The Senate accepted this compromise without alterations.

The final bill actually reduced the tax rates below their previous level on many of the mining industries in the State. It represented a resounding victory for the small mining companies and all of the larger concerns engaged in the exploitation of minerals other than copper. The Administration, avowedly seeking the removal of discrimination in severance taxation had, by some political misfortune, only succeeded in increasing it.

Shortly after the Legislature adjourned, it was pointed out that the new law would exempt nearly all natural gas production in New Mexico from severance taxation. Natural gas is produced by a host of small operators in New Mexico and reaches the consumer through two large middlemen, the Southern Union Production Company and the El Paso Natural

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[10] The Albuquerque (New Mexico) Journal, March 11, 1949.

[11] Ibid., March 12, 1949.

Gas Company. Even a contemplated pipe line to California with a high resultant production would not increase the production of these companies enough to bring them within the scope of the new law.

Nearly three weeks after the Legislature left Santa Fe, a far more serious defect of the law was indicated. The State Bureau of Revenue, after studying the new law closely, discovered that it was conceivably possible for the major oil companies to escape payment of the tax by the device of each leaseholder or royalty owner claiming the $200,000 exemption for the production on each of his leases. On the following day, the Director of the Bureau of Revenue, Victor Salazar, said that the law permits the tax to be levied against the purchasers of petroleum in lieu of the assessment of the producers. By using this clause, he hopes to collect taxes on nearly all of the total production of oil and gas in the State.[12] On April 10th, the Albuquerque Journal's Santa Fe Bureau stated, "There seems little doubt that the whole thing will end up in the courts," and indicated that the present law has enough loopholes in it to make the effort worthwhile to a litigant.

The Legislature could have easily avoided the confusion and pitfalls of the new law by a more careful evaluation of the bill and its conceivable results. The purpose

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[12] Ibid., April 8, 1949.

of the exemption provision was to alleviate the regressive tendencies of the severance tax. However, the application of a flat $200,000 exemption bears no relationship to the dynamic economic factors involved in mineral production. A sharp drop in the market for mineral products, or a sharp general economic deflation, would merely serve to cover into the exemption range a greater portion of the State's mineral production. Thus, at a time when the State would require this revenue most, it would be deprived of a greater portion of it. In other words, the exemption in its present form is based on a momentary economic situation. It is conceivable that by the time the next Legislature convenes conditions will have changed so much that a further revision of this feature of the act will be necessary.

A more permanent and fair method of exemption could have been accomplished through the application of a percentage deduction. This could have been applied to the total production of each operation in terms of tons, barrels, or cubic feet, or to the gross or net value of production. If it was the wish of the Legislature to tax the small producer less in proportion to his production than the large producer a further refinement of categorization of mineral industries on the basis of capital assets and proved reserves valuations could have been added to the structure to develop an even

more elaborate sliding scale. Had this been considered too cumbersome to operate, the Legislature could have categorized the industries in terms of units of production to make the desired differentiation. Some of these refinements would have brought the structure of the severance tax more into balance with its basic philosophy ensuring that the consideration exacted for the privilege of exploitation would not have been overly arbitrary.

CHAPTER X

COMMENTS AND CONCLUSIONS

Thus far, this study has considered several facets of the program of control of natural resources in New Mexico. The size and composition of the mineral industry and prominent products of the State have been roughly indicated. A chapter was devoted to describing the prominent interest groups rooted in the domestic industry and a national organization of this type studied with the view of demonstrating the extent and homogeneity of the vested interests. The relative freedom from restriction in exploitation activity of the metal mining industry has been described. Cooperation as the theme of government-industrial relationships in the development of potash was surveyed. The products of the conflict between public and private interests in the development of oil conservation both nationally and in New Mexico have been examined. The severance tax in New Mexico as it relates to the mineral industry and some of the significant facts of its latest revision through the workings of gifted lobbyists was discussed.

Much of the material is pertinent to the entire picture of mineral resource control, and most is related to the final conclusions that may be drawn upon the basis of this study. That a large residue of power rests with those engaged in mineral resource exploitation should be fairly obvious by now. It is realized that this study has not resulted in exploring the domain of that power to the full delineation of its size

resources, and domination. However, this has been indicated to some extent.

Many minor conclusions have been drawn within the preceeding chapters. Likwise, the approach to others has been indicated although in some cases merely by implication. That which follows is an attempt to connect these and other loose threads and to indicate some of the economic and political problems inherent in the existing arrangement.

At no time during its course was this study evisioned as an exhaustive and conclusive examination and evaluation of the methods and results of the programs of control of New Mexico's mineral resources. It was begun as an exploration into the labyrinth of problems and facts which go to build up the techniques of administration of the State's natural resources. Because of the limitations of both time and information in readily available form, to say nothing of the task of arriving at an adequate understanding of the technological aspects of the study, the problem was regarded as being more one of discovery than of interpretation and evaluation.

The importance of an evaluation of the whole program of mineral resource control is not to be ignored or underestimated. However, it must begin either with the objective of discovering the socially and economically desirable ends to be achieved or with an understanding and definition of

those ends already in hand. This study was inaugurated with meither of these. However, on the basis of the facts presented, it is felt that it may be possible to indicate some of the underlying questions of policy involved, some of the factors which must be given consideration, and possibly some of the alternatives which lie open to the people of New Mexico.

It should be remembered that New Mexico is but a segment of several vastly complex economic, political, and social units whose boundaries are not always contiguous. The effects of policy decisions in this State concerning our mineral resources will travel to a multitude of other regions and reverberate from there to still others. Any discussion of desirable policy is thus extremely complicated for it must take into consideration the external as well as the internal effects. It may even be that posterity must also be considered, for if the aim of some of our resource control is to prolong the life of the deposits, the amount of longevity to be assigned them must be determined.

The most obvious fact concerning the mineral resources studied here is that they are constantly in lesser abundance. There is no more copper oil or potash being generated beneath the soil of the earth by the forces of nature. However, mere production and utilization of a resource does not mean that in all cases it is lost once it is consumued.

Reclamation of scrap materials may recover much of the needed supply of such resources as copper, lead, and zinc. But this is not so with potash, coal, and oil. Once they are consumed, they are no longer recoverable in their original form and for the purposes of their original use.

The popular concept of conservation has generally been to prevent waste of resources at their source. Timber cutting has been restricted in national forests, and reforestation programs have been instituted. Soil erosion has been combated by controlling the flow of streams and attempting to cultivate an adequate ground cover. Even the regulation of potash exploitation by the Federal government is based upon this philosophy for it seeks to recover the greatest possible amount of that mineral from the ground.

However, the exhaustibility of our resources has lead to the question of whether or not it is socially desirable to dictate the end use of minerals. Regardless of the prideful and frequent claims of the petroleum interests that there is enough oil for many years to come, that reserves are increasing constantly, and that modern techniques are prolonging the life of the resource, every barrel of oil taken from the ground represents a decrease in the amount available to future generations. If the aim of conservation is to assure posterity a share in our mineral resources, it would seem that their present use as well as the manner of their

production must be dictated.

But if such a stand is to be taken, there must be some justification for it beyond the mere statement that it should be. There seems to be none better than that set forth by John Ise in 1926.[1]

> "The history of the United States is fundamentally a history of rapid exploitation of immensely valuable natural resources. The possession and exploitation of these resources have given most of the distinctive traits to American character, economic development, and even political and social institutions. Whatever preeminence the United States may have among nations of the world, in industrial activity, efficiency and enterprise, in standards of comfort and living, in wealth, and even in such social and educational institutions as are dependent upon great wealth, must be attributed to the possession of these great natural resources; and the maintenance of our preeminence in these respects is dependent upon a wise and economical use of remaining resources."

The period of time over which a nation desired to extend its "preeminence" gained by virtue of its wealth of resources is, by this criteria, the main determinant in the establishment of a conservation policy.

It has been pointed out that nations are established with the hope that they will outlive numerous succeeding generations. A forward looking eitifenry thus, must think as much of the future as the present in defining the policy which is to govern the use of the sources of its strength

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1. John Ise, The United States Oil Policy (New Haven: Yale University Press, 1926), p. VII.

and power. Upon these grounds it can justify the sacrifices demanded of contemporary generations for the benefit of those yet unborn.[2] Although the philosophy may imply more nationalism than a great many social thinkers would relish, experience has demonstrated that it is among the more powerful arguments available for persuading the vested interests of the worth of conservation. However, this line of thought has its limitations too for if conservation becomes too burdensome because of a desire on the part of the public to include increasingly larger segments of posterity, the present generation may decide to let those of the future shift for themselves.

Not only must the present generation as a consumer be satisfied, but it also must be satisfied in many instances as a producer. The American economy is based upon the progeny of 19th Century free enterprise and individualism. Although in the interests of an ideal program of conservation based upon the continued strength and welfare of the nation might be best realized through public ownership of all natural resources, that condition does not exist. What must be done is to turn to the best alternatives available within the limitations imposed by the economic system. This involves a balancing, so to speak, of the interests of posterity, the

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2. Richard T. Ely and George S. Wehrwein, Land Economics (New York: The Macmillan Company, 1940), pp. 469-472.

consumer, and the producer in the utilization of natural resources. Under the present economic system overly harsh treatment of any of these might produce results which would operate to the detriment of the general welfare of the national society.

That this manner of control is fraught with dangers and difficulties cannot be denied or disregarded. It necessarily involves the utilization of some of the methods of a controlled economy, mainly the restriction of production and possibly the regulation of prices. It can easily produce the fruits if not the tree of a monopoly economy. If society is to demand the restriction of development of its natural resources in the interests of future generations, the consuming public may be called upon to pay a higher price for those products which are marketed. The necessary expenditures of private capital will remain if production is left in private hands and sufficient profit must be allowed to provide for the expansion of facilities as well as their upkeep. If the semblances of a free economy are to persist, that portion of profit which goes to build the private wealth of individuals must not be drastically reduced or removed. What price the public should pay would be partially determined by what profit the private exploiter should realize.

But there are other factors to consider than the mere balancing of interests between the public, posterity, and a

given industry. A conservation program for petroleum must consider more than merely the use of that resource. The broad view should include the utilization of all the power resouces of the nation, petroleum, coal, and electricity. Petroleum is now priced so low that it is in frequent and keen competition with coal. One has merely to observe the number of deisel locomotives used on the railroads and their increase in the past ten years to appreciate this fact. Coal burning ocean liners are a near oddity today. An increasing number of homes are heated by oil or natural gas burning furnaces. The cleanliness of petroleum as a fuel as contrasted with coal makes its use more desirable from the viewpoint of the consumer.

But petroleum is also vastly important in the scheme of modern techology as a lubricant. Mechanization has advanced to the point that there is scarcely a household in the country without a small container of oil somewhere in the kitchen cupboard. It may be that when the last barrel of oil has been produced in this country a satisfactory substitute may have been found to act as a lubriccant. However, it is equally possible that the last barrel of oil will represent the last domestic source of lubricants. Thus, the policy evolved must include the consideration of whether we are to husband our petroleum for use only where it is indispensable and irreplacable, or rely upon the ingenuity of

science to devise satisfactory substitutes when it is completely consumed.

The future demands of technology and the development of other sources of power must be considered as well. If the glowing predictions of atomic scientists are to be confirmed a few decades from now, it may no longer be necessary for society to experience concern over the rates of depletion and replacement of its fuel resources. A method may be developed to convert nearly any abundant mineral into the energy necessary to sustain our present level of mechanization. In such a case, it may be wholly in accord with public policy to consume petroleum as a fuel. The consumer can enjoy its advantages secure in the knowledge that there are ample sources of energy available in other forms to replace oil before it is entirely consumed. The producer of petroleum can continue to realize the profit to which he is presently accustomed free from further governmental restrictions.

The growing tendency of industrial plants to use petroleum as a source of energy rather than coal points up the possibility that eventually there may be only the smallest demand for the latter resource. The shrinkage of the coal market to this point may occur long before the reserves of that resource have been fully consumed. Thus, industry will have started to exhuast another source of power before it has

fully consumed that which it originally utilized. The exhaustion of the petroleum reserves of the nation with no other source of energy developed would require a reconversion of technology to the use of coal. A heavy investment would be required not only to convert the factories, but to reopen numerous mines. The expense would eventually be passed on to the consumer in the form of higher prices for the products he purchased. Thus it may be to the best advantage of both producer and consumer, since the former would save time and effort and the latter money, to use up most of our coal resources before we undertake to further exploit our petroleum reserves.

Of course, there is the further consideration that it may be as wasteful to furn coal for fuel as it is to burn oil. The determination then to be made is whether the numerous products for which coal is the basic raw material are more important to technology and society in general than the various forms of petroleum in its higher uses. In other words, the policy makers in an over-all fuel conservation agency would be called upon to decide the use of which of these two resources or to what extent each of them as a fuel would best represent socially desirable policy.

The above, is like the rest of this study, nothing better than an exploration into some of the problems involved in conservation. It cannot be exhaustive or conclusive, but

only indicative of the extent of the problem of conservation. New Mexico and its problems of natural resource control are the primary concern of this paper.

A broad range of governmental intervention in the production of natural resources has been indicated in previous chapters. In the production of metals and nonmetals, with the exception of potash, government intervention and regulation is at a minimum. Mineral law prescribes certain procedures to be followed in laying claim to ore bearing land. The code for this purpose is long standing, dating back to the 19th Century. It adequately reflects the philosophy of that when the protection of property was the prime consideration of the law and its use left largely to the discretion of the owner. There are requirements for development of land to which claim is laid, but these are aimed solely at stimulating exploitation of minerals. Regulation in the interests of safety of the mine crews is negligible if it is a factor at all in its influence upon the production and marketing of the mineral. It may raise the overhead of operation and increase the cost of the product slightly, but if society is to send men beneath the earth into hazardous occupations for the cause of a high material standard of living, it should be willing to meet the expense of providing for their safety. However, it is still no major hindrance to the production of minerals.

It may be that the so-called "non-consumable" nature of these minerals, i.e. the feasability of recovering them from scrap materials, has forestalled the enactment of conservation laws. Furthermore, at the state level this would be nothing more than an uncoordinated gesture, since the state would be unable to adjust the production of the mineral to the scrapping of finished metal or substitutes. However, this is not to say that the state is incapable of enacting and enforcing laws aimed at the prevention of wasteful methods of extraction of these ores. If it is desired merely to insure that copper lead and zinc are removed from the ground in the most efficient manner, the state can adequately undertake and accomplish this task. A program of this nature would be aimed only at the maximum possible development of the ore with no regard for effects upon the market. Furthermore, it would not be undertaken with the view of deliberately leaving a given percentage of the remaining ore in the ground for future generations. Whether it is necessary and desirable in New Mexico cannot be determined on the basis of this study. Quite possibly it might be advisable for the State to institute a conservation program of this type; for mineral exploiters, especially those with the smaller investments and capital resources, have a tendency to "high-grade" the ore they mine. That is, they will remove only the best specimens of the mineral from the

ground leaving the second and third rate ores. In such cases, the second and third rate grades are, for all practical purposes, lost to society for good. The expense of returning to mine them once the high grade ores are gone is nearly prohibitive, and, if the mine has been closed, reopening of it may be done only at extreme cost reflected by a greatly increased price for the mined material.

Prevention of "high grading" of the ore bodies is the underlying philosophy of the Federal regulation of the potash industry in New Mexico. The special problems of potash mining, the dangers to the salt beds from water seepage, have added a protective function to the activities of the U. S. Geological Survey which is beyond that of requiring the greatest possible development of the deposits.

Intervention of the Federal Government in the production of potash in New Mexico might be called the next level of governmental regulation of mineral exploitation in the State. It is aimed only at the control of the methods of discovery and development and its end is not restriction of production or consumption but the use of proper techniques of search and mining.

The uses of potash make any attempt at the restriction of its production with the view of prolonging the supply the subject of a far-reaching economic discussion. Potash is essential to the sustenance of agriculture in many parts

of the United States, particularly the South. Those who would advocate restriction of domestic production must reckon with either correlative restriction of agricultural production or higher prices for farm products as a result of requiring the farmers to rely on foreign sources of supply for their potash.

As a matter of fact, potash production in the United States is not, at the present time, equal to domestic demand. There is still a market for some German potash in the South. Restriction of domestic production would only result in the expansion of that market, which might be good for the Germans, but expensive for everyone else since the consumer would again be called upon to foot the bill for the benefit of future generations. If the American consuming public is willing to undergo the costs of a program of conservation with a view to prolonging the life of the potash deposits beyond present expectations, the program might be accepted as a socially desirable policy.

The necessity of restricting production of potash for the benefit of future generations must be judged in terms of the amount of potash already available under present rates of production for the use of posterity. The vast deposits in New Mexico extend over nearly all of two of the State's largest counties. Present reserves of the salts appear to be adequate to the demands of several succeeding generations

and the possibility of new discoveries of the mineral is both great and encouraging. The constant drilling of oil wells in this region provides a means of determining the extent and quality of the deposits.

Beyond this, subsequent generations may develop potash substitutes or methods of farming and crop control which will result in a considerably decreased demand for the salts as a fertilizer. Of course, there is also the possibility that future generations may develop other demands for potash or that the present agricultural demand will constantly spread as other lands are depleted by the use of inadvisable farming techniques. In any case, since most of the deposits are located on Federal land, and assuming that the ownership of those tracts will not be altered, New Mexico can scarcely hope to fill more than a minor role in the determination of the future policy of potash exploitation and use. This is, perhaps, as it should be, for the use of potash constitutes a question of major national policy.

Oil conservation in New Mexico, as elsewhere, represents one of the most highly developed forms of governmental intervention in the exploitation of mineral resources. The states not only regulate the method of development with the intent of preventing injury to the reservoir and undue expenditures of energy in oil production, but also regulate production with an eye on market demand for the resource.

Petroleum production in New Mexico is not tailored to the most desirable rates for prolonging the life of the oil pools over the greatest possible length of time, but to the end of satisfying a given percentage of the current market demand. Production of oil fluctuates as the market.

It is conceibable that a program of conservation of petroleum based on the prevention of physical waste, as in the potash industry, might result in the production of less oil than the market demanded. The oil pools would enjoy an increased life and future generations would be assured of some supply of oil. The present generation would have to restrict its use of petroleum and pay a higher price for the resource when consumed or develop satisfactory substitutes. All of this could be the result of producing oil in a manner and at a rate which is in keeping with the best technical and engineering practices of petroleum exploitation.

In discussing the question of prevention of physical waste in the production of petroleum, it will be recalled that there is a relationship between the rate at which petroleum is discharged from a given oil pool and the maximum ultimate recovery of petroleum from that pool. Generally speaking, the greater the rate of production, the larger the amount of petroleum that will be left in the ground. Admittedly, some of the petroleum that is left in the ground might be produced after native reservoir energy is exhausted through the application of secondary recovery methods.

However, such undertakings increase the operating overhead and do not always guarantee the recovery of as much petroleum as might have been realized through a sane utilization of reservoir energy from the date of original production.

It is accurate to say that prevention of physical waste involves a restriction of production. The result might be the production of less oil than could be sold under the price structure resulting from a program based upon the prevention of economic waste. At the present time, as has been noted, the latter principle is applied by most oil producing states.

However, the disparity between the market demand and the produced supply under a program of physical conservation would depend in part upon the number of producing wells supplying the market. Assuming production to be based upon market demand, at a given price level, if the number of producing wells supplying the market was doubled, per capita well production could be halved. Market demand would still be met, but all of the oil wells in the country would be brought to a production figure nearer to that advisable for the best practices of physical conservation at the source. Thus, part of the solution to conservation may be to encourage the drilling of more oil wells and the development of more of our reserves, rather than leaving oil pools dormant in the earth while others are produced at a rate not in keeping

with the best practices of physical conservation.

When it is considered that oil consumption has advanced to the point where it would be impractical, if not inadvisable, to attempt to reduce the market for oil, encouragement of greater petroleum development seems to have some worthy advantages. Market restriction whether through increased price or other means, would involve heavy capital expenditures to convert domestic, commercial, and industrial fuel consuming facilities. It might be wiser to invest the capital that would be thus spent in attempting to increase the immediately available supply of petroleum by doubling the producing units, rather than spending it upon solving the difficulties of a halved market, which would force the use of substitutes for petroleum.

This, of course, involves the question of whether or not the oil market should be stabilized. If a doubling of producing units under a flexible price structure only results in a doubling of the market for petroleum or is followed by it, the cause of physical conservation is not advanced at all. It may even be injured, for market demand may result in a requirement for greater production of the more prolific pools as older ones approach marginal production.

Regulation of oil production on basis of prevention of physical waste at the well head and in the reservoir

could be effectively carried out by several oil producing states. If it was agreed that the socially desirable policy in oil development is to produce in accordance with the soundest engineering practices without regard for market demand, the state would then be the proper province of control of production. The states would be acting for the protection of their own resources, while the consuming public agreed to foot the bill of this type of a program of conservation. The only difficulty would be in securing the adoption of uniform conservation laws and practices among the oil producing states. If the Interstate Oil Compact Commission grounded its policy in this form of conservation practice and effectively met the requirements of the responsibility it thereby assumed, physical conservation would closely approach the ideal.

Such an eventuality seems most unlikely of realization to say the least. Preceeding chapters have indicated that oil conservation practices in the oil producing states are tailored to meeting market demand, which is a function of a selected price. Sound engineering practices are met only insofar as they do not restrict production to a level which would drastically upset the price demand relastionship. Since this is the basis of conservation policy it should be related more closely to the interests of the consumer and the utilization of all of the power and energy resources

of the nation.

New Mexico's oil is largely consumed by persons who owe no political allegiance to the State or its administration. Petroleum from Lea County may find its way to Minnesota or Maine. Yet the people in those states, who may be dependent upon production in New Mexico have no control over the production policies of this State. Although the Governor and the Land Commissioner may be directly responsible to the electorate, that responsibility is to no more than some 600,000 persons. On the other hand, their decisions in regard to the production of petroleum in New Mexico may affect a consuming public of several millions.

If one concedes that the consumer has an interest in the production of petroleum and that conservation is a matter of national rather than state policy, exclusive control by the states is a rather extraordinary condition in a democratic society. The consumer through his demand for production exercises a form of control. However, since his control is limited only to setting the market demand for oil, the consumer is not inclined to act in conformity with the life he desires to assign the nation's oil resources when he fills the gas tank of his automobile at the corner filling station or installs an oil burning furnace in his home. Even if he does take these matters into consideration and act in conformity with them, the effects of his decision must work

backwards through the labyrinth of economic effects and countereffects until its result in the restriction of petroleum production is realized. Furthermore, the organized machinery for the consumer to make his wishes felt in a conservation policy via this chain reaction are at best crude. It is difficult for him to cooperate with his fellows, and should agreement be acheived it constitutes nothing more than a form of social morality which depends for its effectiveness upon the number of recalcitrant members of society. It obscures to the vision of most persons whatever group action may exist, and, finally, does not represent the fullest expression of whatever dominion the public may feel it has over the conservation of petroleum.

Under a system of Federal regulation of the utilization of petroleum and other power resources human selfishness may obstruct any attempts at a more desirable policy of production. Nevertheless, the machinery for the exercise of public control of natural resources would be vastly improved. If the consumer desires to continue using his resources at the same rate, the most that can be said for the condition that will then persist is that it is, at least, more democratic. However, such a result is not a necessary eventuality under Federal regulation of petroleum resources. Government control will bring to the consumer a fuller realization of his interest in development of petroleum. He

then becomes, in some respects, a partner in production, for his influence upon policies of production is decidedly more direct and may travel instantly to the source of the fuel.

Much the same may be said of the present vehicle governing the conservation of petroleum--the Interstate Oil Compact Commission. It represents only the producing public. Admittedly, this segment of the public also consumes petroleum, but there is no assurance that its interest as a consumer outweighs that as a producer. Furthermore, the system can hardly be classed as democratic since it excludes a sizeable proportion of the consuming public, not a majority of it. In addition, the structure of the Compact Commission very nearly insulates it from whatever shifting currents of public opinion there may be in regard to the conservation of petroleum. A democratic society demands more responsiveness to popular attitudes than the Commission can possible provide.

Note should be taken of the impact of the concept of private property upon the development of oil conservation policy in New Mexico. Doubtless the trend has been repeated elsewhere. The rule of "percolating waters" applied to oil production in 1900 recognized a property right in the minerals of petroleum beneath the soil of a land owner so long as the minerals or petroleum remained within his vertical

boundaries. The concept of correlative rights was evolved from this principle. Every man, under correlative rights, is entitled to that share of the petroleum in a pool which is beneath the soil of his tract. He cannot possess himself of more of it and he should not realize a production which is less than the amount in the sands below. It was thought that the best manner of assuring that each producer got his fair share of the oil from a pool would be to allow him to drill his holding and produce the oil under it. However, mere drilling of a tract is no assurance, even under controlled production, that all or only the oil in the ground below will come to the surface. More or less than is there may come to the surface according to the characteristics of the reservoir in that particular spot. Thus, correlative rights is not represented by how much oil is beneath a given holding, but how much of it comes to the surface. Exactly how much is in the sands below may never be determined and it may be changed daily as production continues.

As has been noted, unitization of an oil pool with regulation of the location of drilling units is the most desirable form of production from an engineering standpoint. However, under a unitized system, the landowner in an oil pool may feel that the man on the edge is receiving too much remuneration for his holding. This conviction has apparently outweighed the consideration that unitization

would probably result in a smaller capital investment per pool, which would be to the advantage of all landholders, and a greater ultimate production from the pool with increased returns to the owners. Otherwise, unitization would have enjoyed greater popularity among the oil producers than it presently does. Undoubtedly, this condition has prevented even the suggestion of vesting the Oil Conservation Commission with the power to force unitization in the oil fields of New Mexico.

Perhaps the final makeweight in the definition of a desirable conservation or control policy over mineral resources in New Mexico is their value to the State itself. Copper, lead, zinc, potash, petroleum, and coal are all valuable assets. Their utilization in New Mexico could raise the State from its presently semi-colonial status, foster a local industry, and increase the material lot of our citizens considerable. It may be that the control of mineral resources in New Mexico should be directed to the realization of this end, if it is considered to be a desirable one. The alternative is that New Mexico may someday arrive upon the threshold of industrialization only to find that it has been stripped in preceeding decades of those minerals which would contribute greatly to enhancing its position and encouraging greater local development. A policy directed to the end of retaining some of the State's natural resources for home use

and consumption turns upon the decision of the weighting that shall be accorded the domestic interest as against the larger national public interest. The balance that is struck in this consideration will show the way for the people of New Mexico.

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APPENDIX

SUPPORTING MATERIAL

Included in the appendix are descriptions of the major exploiters of mineral resources in New Mexico. The New Mexico Miners and Prospectors Association and the National Oil Scouts and Landsmen's Association have termed them the leaders in production of minerals in New Mexico. Moody's Investors Service of New York and London is the source of the descriptive information.

Also included in the appendix are copies of letters sent to several persons and agencies in thecause of the research and the resulting replies. Much of the information they contain has been utilized in the body of the thesis. The remainder is material not pertinent to the problem but of interest to those who wish to become more informed on matters relating to mineral resources and the exploitation.

There are a few pages of statistical information, a statement of the aims of the New Mexico Miners and Prospectors Association, and a map of New Mexico indicating the regions on which this study has centered and the principal cities visited in the course at research.

A large number of forms generally required of mineral exploiters was collected in the course at the research. The officials of the Public Land Commission, the Oil Conservation Commission, the State Corporation Commission, and the U. S. General Land Office were very cooperative in supplying this material. It was thought that these would be valuable in the study of admistrative procedure as well as a lucid illustration

of the functions of some of those offices charged with various aspects of mineral resource administration, in New Mexico. Unfortunately, only one copy of each was obtained. Therefore, they have been collected under separate cover and placed at the disposal of the Graduate Office.

April 20, 1949
818 La Vega Court
Albuquerque, N.M.

Moody's Investors Service
65 Broadway
New York 6, New York

Dear Sir:

Request is hereby made for permission to reproduce 31 reports published in Moody's Manual of Investments, Industrial Securities, American and Foreign, Volume 3, 1946, and two reports in Moody's Manual of Investments, Utilities, 1947.

I wish to include this material in the Appendix of my thesis for Master's Degree entitled "The Control and Exploitation of Mineral Resources in New Mexico," at the University of New Mexico, Department of Government. This is to be an unpublished manuscript.

It is my opinion that the inclusion of this material in my thesis will vastly enhance the necessary economic background to an understanding of the study. Your cooperation in this matter will be most sincerely appreciated.

Yours truly,

William J. Cunningham

COPY

Moody's Investors Service
65 Broadway
New York 6, New York

April 26, 1949

Mr. William J. Cunningham,
818 La Vega Court
Albuquerque, N.M.

Dear Mr. Cunningham:

This acknowldges your letter of April 20th. We have no objection to your reproducing the material detailed in your letter and trust that you will consider this letter your authorization to do so.

Very truly yours,

HOWARD F. GILDEA

Howard F. Gildea
Vice President.

HFG:CC

COPY

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65 Broadway
New York 6, New York

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815 La Vega Court,
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Very truly yours,

HOWARD E. CLUXEN

Howard E. Cluxen
Vice President.

HEC:CC

AMERADA PETROLEUM CORPORATION[1]

Engaged in the acquisition, development, and exploitation of petroleum lands, producing crude oil and natural gas. Operations are in many major oil areas of the United States.

As of December 31, 1945, owned a full or part interest in 1,457,000 acres of leaseholds, royalties, mineral rights, etc., located principally in Texas, Oklahoma, New Mexico, Kansas, Louisiana, Mississippi, Nebraska, South Dakota, and California. Also, a partially owned subsidiary held undeveloped leases in Venezuela.

As of December 31, 1945:

Net production of crude oil	18,090,201 bbls.
Productive oil wells	1,744
Productive gas wells	123
Net profit	$5,396,770
Total current assets	12,582,862
Lands	66,786,401
Depreciation	74,935,903
Leases, equipment	23,668,489
Miscellaneous equipment	1,706,613
Total assets	31,388,243

[1] John Sherman Porter, Editor-in-Chief, Moody's Manual of Investments, Industrial Securities, American and Foreign (New York: Moody's Investors Service, 1946), Vol. 3, p. 1972.

AMERICAN REPUBLICS CORPORATION[2]

Company is engaged in the following: production of crude petroleum formerly carried on by Republic Production Company (Delaware) which company operated in Texas, Arkansas, Louisiana, and New Mexico; processing, marketing, and terminaling of petroleum and petroleum products formerly carried on by American Petroleum Company; operation of tank steamers, barges and towboats formerly carried on by Petroleum Navigation Company and Intracoastal Towing and Transportation Company.

Properties:

At December 31, 1945, company held interest in properties as follows:

State	Acres
New Mexico	14,901
Texas	1,490,408
Louisiana	90,052
Arkansas	67,511
Mississippi	11,709

Assets:

Total current	$13,658,732
Oil producing	10,681,784
Oil pipe line	823,240
Total	28,339,043

Gross sales:

Oil division	3,692,590
Gross	32,823,034

Subsidiaries:

American Petroleum Company
Pennsylvania Shipyards, Incorporated
Republic Production Company
Petroleum Coal and Iron Company (Inactive)

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[2] Ibid., p. 1002.

Petroleum Iron Works of Pennsylvania (inactive)
Petroleum Building Company (inactive)

AMERICAN SMELTING AND REFINING COMPANY[3]

Incorporated in New Jersey on April 4, 1899 as a consolidation of a number of mines, smelters, and refineries.

During 1943, purchased lead and zinc mine property of Ozark Mine and Smelting Company, near Magdalena, New Mexico.

Company is both an operating and a holding company.

Subsidiaries:

Andrews Lead Construction Corporation, New York. (Fabricating)
Asarco Mercantile Company, Texas. (Buying and selling machinery, supplies, etc.)
Compania American, S.A., Chile. (Buying)
Compania American Smelting Boliviana Limitada, S.A., Bolivia, S.A. (Mining property)
Compania Carbonifera de Sabinas, S.A. Mexico. (Coal and Coke)
Compania Minera Asarco, S.A. Mexico. (Mining and Processing)
Compania de Terrenose Inversiones de San Luis Potsoi, S.A. (27.9%) Aggregate percent owned by company and wholly-owned subsidiaries, Compania Minero, Asarco, S.A., and Compania Minero Nacional, S.A., equals 100%) Real Estate.
Compania Minera La Ventura, S.A., Mexico. (Mining properties)
Companera Minera Nacional, S.A., Mexico. (Mining property and railroading)

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[3] Ibid., p. 2011

Compania Minera de Alearon, S.A.
Crown Chemical Company (Inactive)
Federated Metals Corporation (Inactive)
Great Western Smelting and Refining Company (Inactive)
International Metal Company, New York, (Metal sales)
Mexican Zinc Company, S.A., Mexico, (Zinc smelting)
Mike Horse Mining and Milling Company, Montana, (Silver, lead, copper, and zinc mining and milling)
Northern Peru Mining and Smelting Company, Peru, (Mining)
Sociedad Minera Milluachaqui, Limitada (52%)
Union Smelting and Refining Company (Inactive)
Prairie Brass and Metal Company

In addition has controlling interests in 24 subsidiaries engaged in mining, smelting, manufacturing, and real estate in the United States, Newfoundland, and Latin America. Also two foreign subsidiary corporations which are not named and in which proportion of ownership is not disclosed.

Company and subsidiaries are primarily engaged in the custom smelting and refining of non-ferrous materials and in the sale of refined metals. In addition, the organization engages in mining and milling operations at various owned, leased or managed properties. Besides treating materials from its own mining operations and material purchased from others, the company smelts and refines on tolls, i.e. treats products for a consideration in either money or metals and returns the refined metals to the owner. The business also includes the buying, reconditioning, and selling of non-ferrous scrap and secondary metals; the recovery and sale of by-products from smelting and refining operations; the mining of coal and production of coke, principally for company use. To a limited extent, manufactures, fabricates, and sells non-ferrous metal products.

Among its principal mines and plants in the United States are:

Ground Hog Mine- Properties located at Vanadium, N.M., managed by company and produces silver, lead, copper and zinc.

Magdalena Unit- Located at Magdalena, N.M., managed by company and produces zinc, lead, and silver. Copper and lead smelters at El Paso, and lead smelter and refinery at Amarillo.

Net earnings	$27,193,213
Depreciation	3,408,502
Depletion	871,883
Net profit	11,468,678
Total assets	200,499,733
Net current assets	91,126,101

Buildings and equipment, except emergency facilities, at the various smelters, refineries, and manufacturing plants of company and its subsidiaries consolidated were depreciated generally at a composite rate of 4% per annum (with exception of one non-operating smelter in Peru). There were, however, some exceptions including plants handling secondary metals, where varying rates were used based on estimated economic life of specific assets. Generally the rates used correspond to those allowed in company's Federal income tax return, and also to the allowances therefore by the Bureau of Internal Revenue for years in which returns have been finally audited. Buildings and equipment at the various mines were amortized generally on the basis of the estimated remaining economic life of the asset, which ever was shorter.

Depletion of mineral lands was written as of the March 1, 1913 calculation as determined by the Bureau of Internal Revenue and on the basis of cost by mines acquired since that date.

In general, the policy contemplates that carrying value of mining properties will be amortized before

exhaustion of ores which can be mined at a profit. In addition to depletion written off in 1943 on definite bases, there was arbitrarily charged off as depletion by a foreign subsidiary $200,000 in respect to mine units whose operations in recent years have been negligible and whose future operations are uncertain.

ATLANTIC REFINING COMPANY[4]

Incorporated in Pennsylvania April 29th, 1870. In 1892, issued stock to acquire all assets of Standard Oil Company (Pittsburgh), Eclipse Lubricating Co., Ltd., Imperial Refining Co., Ltd., The Acme Oil Co., and The Electric Light Co. Control was held by the Standard Oil group from 1874 until the latter's dissolution in 1911.

In April, 1942, company, together with Gulf Oil Corp., Socony Vacuum Oil Co., Texas Co., and Pure Oil Co, organized Neches Butane Products Co. to manufacture synthetic rubber from butadiene at Port Arthur, Texas.

Subsidiaries:

Atlantic Refining Co. is an operating and holding company. On December 31st, 1945, its subsidiaries in which it held 100% voting power numbered 24 and were operating in the United States, Belgium, South Africa, Brazil, Cuba, Germany, Spain, Portugal, and Venezuela. Nearly all were engaged in marketing. Had controlling interest in four other companies.

The business comprises the acquisition and development of oil and gas lands, production, purchase, sale, transportation, and refining of crude oil and its products, and the transportation, wholesale, and retail marketing of petroleum products in the United States and certain foreign countries. In 1940, foreign sales were 8% of total volume whereas in 1939, such business was 13% of volume and in 1929, was 29%.

At the close of 1945, the organization held all rights on 4,549,000 acres of domestic lands and 7,464,000 acres of foreign lands. It had

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[4] Ibid., p. 1859 and p. 2891.

2,862 operating wells. The domestic properties are in Alabama, Arkansas, Florida, Kansas, Louisiana, New Mexico, Mississippi, Montana, Oklahoma, Texas, and Wyoming. The foreign acreage, which is located in Venezuela, Haiti, Cuba, and Nicaragua, is being explored but no commercial production has been obtained.

Company owns and operates 1,731 miles of crude gathering and trunk pipe lines within Louisiana, Texas, and New Mexico, terminating at deep water terminals at Atreco, Texas City, and Harbor Island, Texas.

Company and subsidiaries market petroleum products in Brazil, Belgium, South Africa, Portugal, and West Africa, and to a lesser extent in North Africa, Holland, and certain other countries. Subsidiaries own or lease tidewater terminals, storage, and marketing facilities in these distribution areas.

Total assets as of December 31, 1945, equal $272,000,267.

Crude Production	Book Value	Reserves
Domestic	$121,189,807	$46,367,137
Foreign	1,834,730	110,595

CONTINENTAL OIL COMPANY[5]

Incorporated in Delaware, October 8, 1920, as the Marland Oil Company to acquire through an exchange of stock control of Marland Refining Corporation and Kay County Gas Company. Name changed to Continental Oil Co. June 26, 1929 at which time it acquired the assets (subject to liabilities) of Continental Oil Co. of Maine for a consideration of 2,317,266 shares of stock.

Is both an operating and a holding company. 100% voting control in:

Continental Oil Co. of Texas (Inactive)
Continental Oil Co. of Nevada
Continental Steamship Co.
Richardson Lubrication Co. (Inactive)

Controlling interest in:
Continental Pipe Line Co.
Buck Creek Oil Co.
Oil and Gas Research Inc.
New Mexico Pipe Line Co.
Reagan Co.
Purchasing Co., Inc.
Rocky Mountain Pipe Line Co.
Standard Shale Products Co. (Inactive)
Texon Oil and Land Co.

The company and subsidiaries comprise a complete unit in the oil industry, being engaged in producing, transporting, refining, and marketing petroleum and its products. Uses the trade name "Conoco."

Produces more than it uses in refining, and is therefore a seller of crude oil balances; distributes more gasoline than it manufactures so acquires some gasoline from others. Since 1935, company has not engaged in transportation or distribution of natural gas at retail. Natural

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[5] Ibid., p. 1988.

gas is processed for extraction of natural gasoline by the company or others, or is manufactured into carbon black by others. Natural gas and residue gas are also sold at wholesale.

Business is practically all within the United States. In 1940, less than 0.6% of sales of refined products were made abroad or were known to be for foreign destination. Has no foreign marketing facilities.

On December 31, 1945, held leases on 197,555 net acres of producing oil lands and on 1,752,220 net acres of prospective oil lands. Also royalties and mineral rights on 117,302 net royalty acres. Prospective acreage in Oklahoma, Kansas, Texas, New Mexico, California, Colorado, Wyoming, Louisiana, Indiana, Illinois, and Montana.

Producing acreage in Oklahoma, Kansas, Texas, New Mexico, California, Colorado, Wyoming, Louisiana, Indiana, Illinois, and Montana.

Through a subsidiary, holds a large acreage of oil concessions in Canada. Owns controlling interest in 10,243 acres oil shale land in Colorado as reserve for future development.

Owned and operated eight refineries as of December 31, 1945.

	Daily Capacity (barrels)
Artesia	1,500
Farmington	750
(These are the company's smallest)	

Total production of crude oil...33,941,827 bbls.

Total assets...$173,240,779

	Book Value	Related Reserves
Leaseholds and Royalties	$27,706,548	$10,116,210

EL PASO NATURAL GAS COMPANY[6]

Incorporated in Delaware, November 28, 1928, to construct, own, and operate a 16 inch pipe line to supply public utility and industrial companies in the city of El Paso, Texas and adjacent territory with natural gas from the Lea County, New Mexico field. The line was completed in June, 1929 and has branches, gathering lines, and other accessories for transporting gas wholesale.

Fort Huachuca Gas Company, a former subsidiary, was merged on May 22, 1942.

Company and its subsidiaries, El Paso Gas Transportation Corporation, and Compania Occidental de Gas, S.A. de Capital Variable are engaged in the business of purchasing natural gas from producers in the Lea County gas field in southeastern New Mexico, transmitting it through a pipe line system and selling it at wholesale to public utility and industrial customers located principally in or near El Paso, Texas; Douglas, Bisbee, Tucson, Superior, Ajo, Hayden, Miami, Morenci, and Phoenix, Arizona; Carlsbad, Hurley, and Lordsburg, New Mexico; and Cananea, Mexico.

Western Gas Co., a wholly owned subsidiary, organized June 11, 1936, is engaged in the production of gas, and oil incidental thereto.

Company and its subsidiaries own and operate over 1,954 miles of pipe line. The pipe line system has a maximum delivery capacity of 138,000,000 cu. ft. per day. The main line extends from the gas fields in Lea County through El Paso to Phoenix.

Company owns 100% of the stock, except directors' shares, of Cia. Occidental de Gas S.A. de Capital Variable; El Paso Gas Transportation Corporation,

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[6]John Sherman Porter, Editor-in-Chief, Moody's Manual of Investments, Public Utilities, American and Foreign (New York: Moody's Investors Service, 1947), Vol. 4, p. 1238.

Pressure Weld Company, and Winkler County Pipe Line Company. As of February 1, 1946, merged the Engas Company, a wholly owned subsidiary. On May 17, 1947, Western Gas Company, a wholly owned subsidiary, and Gulf States Oil Company, were merged into Western Natural Gas Company.

The Engas Company is engaged in wholesale marketing of gasoline and by products produced at company's gasoline absorption plants located in Jal field.

Pressure Weld Company, a wholly owned subsidiary, was organized July 6, 1942; engaged in leasing and operating portable machinery for field welding of pipe lines and in contracting pipe line welding by this method. Contracts have been completed with Linde Air Products Company (subsidiary of Union Carbide and Carbon Corporation) for the payment of royalties to that company for the basic patent.

The Winkler County Pipe Line Company was organized August 14, 1944, and was inactive at December 31, 1944.

As of December 31, 1945, among company's important contracts, with the approximate number of years before expiration, were the following:

Texas Cities Gas Co.-- 13 years
Central Arizona Light & Power Co.-- 13 years
Tucson Gas, Electric Light, & Power Co.-- 13 years
El Paso Electric Co. (as extended)-- 9 years
Phelps Dodge Corp.-- 6 years
Cananea Consolidated Copper Co.-- 1 year
Nevada Consolidated Copper Co.-- 7 years
Phelps Dodge Refining Corp. (formerly Nichols Copper Co.) as extended-- 6 years

Beginning with August 1, 1939, company has a ten year contract with Miami Copper Company for requirements at Miami, Arizona, and commencing November 1, 1941, a fifteen year contract with Phelps Dodge Corporation for requirements near

Morenci, Arizona. Certain of such contracts are subject to termination by the customers in case of failure of the company to deliver gas in specified quantities or in case of increases of rates as a result of governmental regulation. None of such contracts specify minimum amounts of gas which the customers are required to take. In August, 1945, a five year contract was made with International Smelting and Refining Company for sale to it of its full requirements of all plants and smelters at Inspiration, Arizona.

Under a supplemental agreement in connection with natural gas pipe line system under construction from Texas and New Mexico to Los Angeles area (see under "Property"), Southern California Gas Company and Southern Counties Gas Company of California have agreed to take delivery of a minimum of 25,000,000 cu. ft. of gas per day, beginning in October, 1947, and such additional quantities as may be delivered until the line is completed to a capacity of 175,000,000 cu. ft. per day. It is expected that the line will be completed by January 15, 1948. Original contract required acceptance of delivery of only 125,000,000 cu. ft. per day for first year and 175,000,000 cu. ft. per day thereafter. Under their contract with company, the California utility companies are required to take a minimum of 91% of capacity of the line. When the capacity of 175,000,000 cu. ft. per day is reached, minimum gross revenues under this contract will be $8,450,000 per year.

In addition to its gas purchase contracts, the company has gas rights and development contracts with certain oil producing companies whereby the company has the right to drill wells for natural gas in certain tracts of land in Lea County, New Mexico. The company and its wholly owned subsidiary, Western Gas Company, owns approximately 205,569 acres of leases and gas rights, including oil rights on 173,832 of that acreage in Southeast New Mexico, West Texas, and Southwest Kansas. Of this acreage approximately 43,993 acres are located in Lea County

New Mexico. The companies own 49 wells and a one-half interest in four additional wells in the Lea County, New Mexico gas field. Incident to drilling for gas, oil was developed in 16 of the wells.

On January 1, 1944, the company acquired from the Texas Company, 7,040 acres of gas rights together with 17 gas wells in the Rhodes area in the Lea County gas fields and formed the Rhodes Unit embracing 5,480 acres to be used in part as a storage reservoir for excess residue gas that would be otherwise wasted.

Total assets at December 31, 1946- $82,203,387.

GULF OIL CORPORATION[7]

Incorporated in Pennsylvania, August 9, 1922, as Gulf Oil Corporation of Pennsylvania to acquire in exchange for stock, the assets and business subject to liabilities of Gulf Oil Corporation, a New Jersey concern (which was subsequently dissolved) incorporated February 13, 1907. Name of Gulf Oil Corporation was adopted April 22, 1936.

Subsidiaries:

Is an operating and holding company holding 100% of voting power in the following:

Gulf Refining Company, Delaware, producing, transporting, refining, and marketing
- Danish American Prospecting Company, mineral concession in kingdom of Denmark
- Gulf Exploration Company
  - Gulf Exploration Company, Limited, Great Britain
- Eastern Gulf Oil Company, Limited, Great Britain
- Southeastern Pipe Line Company (52.2%)

Venezuela Gulf Oil Company, Delaware
- Mene Grande Oil Company, C.A. Venezuela, producing in Venezuela

Mexican Gulf Oil Company, Delaware, production and pipe lines in Mexico

American International Fuel and Petroleum Company, operates in Mexico

Carribean Gulf Oil Company

Colombian Gulf Oil Company

Darien Gulf Oil Company

Magdalena Gulf Oil Company

Western Gulf Oil Company, Delaware, producing in California

Gulf Research and Development Company, engineering and chemical research

Gulf Casualty Company

F and M Independent Oil Company, Incorporated

Tabb's Bay Oil Company (60%)

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[7] Moody's Industrial Securities, op. cit. p. 1465.

Investments in:

Kuwait Oil Company, Limited, (British) 50%, operating in Middle East
Texas Gulf Sulphur Company, (33.8%)
United Petroleum Securities Corporation, (22.5%)
Southeastern Pipe Line Company, (52.5%)
Project Five Pipe Line Corporation, (Arkansas) 45%
Toledo-Northern Pipe Line Company, (20%)

Company directly or through its subsidiaries, is engaged principally in the production, purchase, transportation, refining, and sale of crude petroleum and products derived therefrom, or in business related thereto, in the United States and in foreign countries. Company and certain of its subsidiaries engaged in exploratory and development work in connection with the acquisition of oil for future requirements.

Products distributed in all states east of the Mississippi except Wisconsin as well as Texas, Arkansas, Louisiana, Oklahoma, New Mexico, Colorado, all through jobbers at wholesale and retail.

Company and its domestic subsidiaries own reserves of crude petroleum in numerous fields in the Mid-Continent and Gulf Coast areas and to a lesser extent in California, Illinois, Michigan, Indiana, and Kentucky.

Total domestic oil and gas acreage:

	Fee & Mineral Fee	Leasehold
Producing	7,031	557,554
Non-producing	53,614	9,446,214

At end of 1942 proved United States reserves estimated at 1,076,000,000 bbls.

Company owns 5,853 miles of trunk lines and 2,405 gathering lines; (one of six principal pipe lines runs from West Texas, New Mexico fields to Sweetwater refinery and Port Arthur-Tulsa lines)

29 ocean tankers, harbor and lake power boats, and harbor, canal, and river barges; 1,551 tank cars and 4,268 leased tankers; eight refineries. Crude oil storage space amounts to 20,700,000 barrels.

As of December 31, 1945, total assets equaled $652,811,381 and value of plants, leases, equipment, etc., equaled $1,005,745,741.

HUMBLE OIL AND REFINING COMPANY[8]

Incorporated in Texas, June 21, 1917, as successor to Humble Oil Company, a Texas corporation organized in 1911.

Subsidiaries:

Humble Pipe Line Company, Texas, pipe lines
Humble Oil and Refining Company of Georgia

Also as of December 31, 1945, owned less than 100% of the following, but had controlling interest in all:

Salt Flat Water Company
Spanish Peak Oil Company (Inactive)
Willbarger Water Company (In liquidation)

As of December 31, 1945, 72.13% of the voting control of Humble Oil and Refining Company was owned by Standard Oil Company, New Jersey.

Company is an integrated unit in the oil industry, engaged in the acquisition, exploration, development, and exploitation of oil lands; in the transportation of crude oil, and in the distribution of refined products. Company also produces, processes, and sells natural gas. Activities are largely confined to the state of Texas. Also an important producer of butadiene, toluene, and butyl rubber.

As of December 31, 1945, the company had 788,403 acres of developed oil and gas lands in the states of Texas, Louisiana, New Mexico, Mississippi, and Florida, and 16,513,045 acres of undeveloped property in the states of Texas, Louisiana, New Mexico, Alabama, Mississippi, Florida, and Georgia.

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[8] Ibid., p. 2530.

At the end of 1945, company was operating 8,353 producing oil wells and had a working interest in 780 additional producing wells operated by others.

At the end of 1945, company's subsidiary, Humble Pipe Line Company owned 2,492 miles of gathering lines and 5,447 miles of trunk lines together with pump stations and tankage. These facilities serve all principal fields in Texas and Southeast New Mexico.

Gross production in 1945 equaled 135,814,900 bbls. of crude.

Engages in retail and marketing only in Texas.

As of December 31, 1945, total assets equal $559,552,291.

ILLINOIS ZINC COMPANY[9]

Illinois' zinc mine and mill sites are located in New Mexico and rolling mill and other lands in Peru, Illinois. A new strip rolling mill at Chicago started production in July, 1938. Smelting plant near Dumas, Texas was sold in 1943 to former lessee, American Zinc Company of Illinois. Capacity of rolling mill, 25,000 tons of sheet zinc and 10,000 tons of strip zinc per annum.

Controls (100%) Peru Mining Company incorporated in Delaware December, 1924. Latter owns in fee a 500 acre-tract mineral tract near Hanover, New Mexico upon which are two mines; one has produced 537,000 tons of ore over 10% zinc; the other mine is partially developed. Peru Mining also owns a 500-ton (daily capacity) flotation concentrating mill and flash roasting plant near Deming, New Mexico.

In 1942, New Mexico Consolidated Mining Company was formed as a wholly owned subsidiary of Peru Mining Company to operate other mining property at Hanover, New Mexico, and in September, 1942, to acquire and operate other mining property both adjacent to property owned by Illinois Zinc Company.

Illinois Zinc Company started operations under its own management of the mine and mill at Hanover and Deming, New Mexico as of January 1, 1940.

Agreement between Peru Mining Company and American Zinc Company of Illinois covering purchase and sale of concentrates from Deming Mill has been amended to expire April 30, 1946.

As of April 30, 1945:

Net sales	$5,025,704

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[9] Ibid., p. 257.

Depreciation and amortization	$228,356
Total income	127,942
Net profit	127,479
Plant and equipment	1,589,918
Total assets	2,381,637
Net current assets	816,950

INTERNATIONAL MINERALS AND CHEMICAL CORPORATION[10]

On April 6, 1942, International Minerals and Chemical Corporation merged Union Potash and Chemical Company, a subsidiary engaged in mining and refining of potash salt and production of by-products thereof, and effected a recapitalization. At time of merger International owned approximately 99.6% of preferred and 94.5% of common stock of Union Potash which holdings had been accumulated over a period of years beginning in 1936 at a cost of $2,632,078.

Pursuant to the plan, $1,502,000 International Minerals and Chemical Corporation convertible debenture three and one half's, due 1947 were issued par for par in exchange for a like principal amount of Union Potash and Chemical Company, five year convertible debenture four and one half's. Each preferred share of Union Potash was exchanged for four fifths of a common share of International plus $25.00 cash and each common share of Union Potash was exchanged for four fifths of a common share of International. Each old preferred share (with $93.00 of unpaid accumulated dividends) of International was exchanged for one new preferred share and three and one half new common shares of International was exchanged for one fourth of a new common share of International. No new shares were issued for International's holdings of Union Potash stock.

Subsidiaries:

Functions chiefly as an operating company. As of June 30, 1945, owned 100% of the voting control of the following:

International Agricultural Corporation, Limited, Canada
Union Springs Fertilizer Company, Alabama
Florida Mining Company, Maine (Inactive)

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[10] Ibid., p. 1438.

Lite Metals Corporation, Delaware (Inactive)
Prairie Pebble Phosphate Company, Georgia
(Inactive)
Amino Products Company (Inactive)

As of June 30, 1945, owned less than 100% of the voting control of the following subsidiaries:

The Millen Fertilizer Company (51.59%) Georgia
Peoples Fertilizer Company (54%) Alabama

As of June 30, 1945, owned 50% voting control of the following affiliates:

Catawba Fertilizer Company, South Carolina
Louisville Fertilizer and Gin Company, Georgia
Shellman Home Mixture Guano Company, Georgia
Shoperton Guano Company, Georgia

Properties:

Forty-six processing plants of various types mostly in New England, Old Northwest, Eastern Seaboard, and South
Six rock mining properties in Florida, Montana, and Tennessee
Carlsbad Mine and Refinery

Company holds leases from United States Government on 7,674 acres of land containing potash deposits near Carlsbad, New Mexico which leases run for twenty years from October, 1938 with renewal rights. Royalties payable to United States Government are 3½% and 2½% of gross value of muriated sulphate products at point of shipment. Such royalties may be increased after January 1, 1950 to 5% at discretion of the Government. In May, 1943, application had been made for lease of approximately 7,680 additional acres.

The mine and plant at this property was completed and in operation in the fall of 1940.

Daily capacity of potash properties as of May, 1943: 3,460 tons of ore; daily capacity of refinery, 820

tons of finished product. Recoverable tonnage of commercial ore has been estimated at about 20,000,000 tons.

As of June 30, 1945, total assets equaled $37,050,342 and net current assets equaled $11,906,212.

Included in the merger was a payment resettlement of litigation affecting Union Potash and Chemical Company amounting to $67,378.

KENNECOTT COPPER CORPORATION[11]

Incorporated in New York April 29, 1915.

In April, 1923, and subsequently, acquired additional stock in Utah Copper Company. In 1926, Nevada Consolidated Copper Company, whose stock was 43% owned by Utah Copper Company, acquired properties of Ray Consolidated Copper Company which included properties the latter had acquired in 1924 from Chino Copper Company.

Subsidiaries:

Is an operating and holding company, owning as of December 31, 1944, 100% voting control of the following:

Utah Copper Company
Braden Copper Company, Maine, mining, processing in Chile
Kennecott Sales Corporation, metal sales
Mines Products Corporation
Alaska Development and Mineral Company, New York, mainly a holding company, owning 660,000 shares of 2,550,000 shares outstanding of Mother Lode Coalition Mines Company
Chase Brass and Copper Company, Incorporated, Connecticut, copper and brass products
The Uspon Water Company
Chase Metal Company, Incorporated
The Waterville Corporation
The Great Brook Manufacturing Company
The Superior Wire Cloth Company (63.75%) Pennsylvania, screen cloth
Hallenbeck-Hangerford Realty Corporation (50%) New York real estate
Copper River and Northwestern Raliway Company, Nevada (Inactive) railroad
Nevada Northern Railway Company, Maine, railroad

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[11] Ibid., p. 2278.

Bingham and Garfield Railway Company, Utah, railroad
Kennecott Wire and Cable Company, copper wire
American Electrical Works, Incorporated
Ray Electric and Telephone Company, Arizona, light and power
Santa Rita Store Company
Two unnamed foreign subsidiaries.

Also owned, as of December 31, 1944, less than 100% voting control of the following subsidiaries:

Continuous Casting Corporation (50%) controlled by American Smelting and Refining Corporation which owns the other (50%) of the stock
Garfield Improvement Company (70%)
Garfield Water Company (66.67%)
Garfield Chemical and Manufacturing Corporation (50%) sulphuric acid, controlled by American Smelting and Refining Corporation which owns the other 50% of the stock
Gibson Stores Company

Chief activity is the operation of company's non-ferrous metal mines, the treatment of the resulting copper ores by concentration and in some instances by smelting; the selling of Bessemer, furnace refined, and electrolytically returned copper. The fabrication of various copper products, including brass and copper mill products. The operation of two railroads, whose facilities are largely useful in conjunction with copper mining and ore treatment activities.

The organization has an important foreign interest in Chile which in 1940, accounted for approximately 25% of aggregate copper production.

Principal copper mines are located at Bingham, Utah; Ruth, Nevada; Ray, Arizona; Santa Rita, New Mexico; and Sewell, Chile. Company also has a worked out property at Kennecott, Alaska, where operations ceased in October, 1938, and equipment was salvaged.

Property in New Mexico (called Chino Unit) is also a porphyry mine operated by power shovel methods. The concentrator is located at Hurley, New Mexico, about nine miles from the mine where there is also a power plant. A smelter for this unit was completed early in 1939 so that henceforth only refining will be conducted by outside interests.

Net income for 1945 equaled $30,253,821. As of December 31, 1945, total current assets equal $246,061,392, and net current assets, $215,849,092.

KERR-MCGEE OIL INDUSTRIES, INCORPORATED[12]

Incorporated under laws of Delaware, November 9, 1932 as A & K Petroleum Company. Name changed to Kerlyn Oil Company April 12, 1937, and to present title January 18, 1946.

Principal business is the acquisition, development, ownership, and operation of lands productive of crude oil and/or natural gas. Company is qualified as a foreign corporation to do business in Oklahoma, Texas, Arkansas, Kansas, Colorado, Wyoming, Montana, and South Dakota.

As of December 1, 1945, company had interests in 410 producing oil and/or gas wells in Oklahoma, Kansas, and Texas, also leases in Oklahoma, Texas, Kansas, Arkansas, Colorado, Wyoming, and South Dakota.

Many of the producing wells in the Oklahoma City field are owned and operated in conjunction with Phillips Petroleum Company, and are served by the pipe lines of large purchasers of crude oil; 30 natural gas wells are owned and operated in Moore County, Texas, the entire production of which is contracted for by Phillips Petroleum Company.

Subsidiaries:

Franklin County Gas Company
Anchor Exploration Company
Fenter Refining Company

The latter acquired refinery of Cosco Oil Company, Wynnewood, Oklahoma, in February, 1945.

Company jointly with Big Chief Drilling Company acquired 66⅔% of M-K-B Drilling Company, Incorporated, also owns 50% of Kerr-McGee Building Corporation.

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[12] Ibid., p. 1058.

As of June 30, 1945, total assets equal $5,817,245, and leaseholds, etc., equal $6,046,351.

MAGNOLIA PETROLEUM COMPANY[13]

Socony Vacuum Company owns 99.9992% of the stock.

Socony Vacuum Company incorporated in New York, August 10, 1882 as Standard Oil of New York. From 1899 until 1911, stock was held by the Standard Oil Company (New Jersey) and was then distributed to its stockholders in compliance with the dissolution decree of the federal courts. Name was changed to Socony Vacuum Corporation, in 1931, and to Socony Vacuum Oil Company, Incorporated, in May, 1934.

In December, 1925, acquired all the properties of Magnolia Petroleum Company, in which 70% of the stock had been acquired about 1918. Properties were conveyed to a new company, Magnolia Petroleum Company, organized under the Texas laws and entirely owned by the company.

In 1933, transferred its properties and business in the Far East to a new company, Standard-Vacuum Oil Company in exchange for 50% of the latter's stock. The Standard Oil Company (New Jersey) also transferred properties to the new organization in exchange for the other 50% of the stock.

Since 1935, company and The Texas Corporation each have acquired a 50% interest in the South American Gulf Oil Company, and a 49.88% interest in Colombian Petroleum Company. These latter concerns have a joint contract with the Government of Colombia granting to Colombian Petroleum Company a crude oil concession known as the "Bareo" concession and various other privileges.

Early in 1944, company and Standard Oil Company (New Jersey) jointly organized Intaua, Incorporated (Delaware) to provide United States

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[13] Ibid., p.1906.

air transport companies a centralized source of supply in all foreign countries except those where government oil monopolies exist.

Wholly owned subsidiaries:

Frank Harris Floyd, Incorporated
General Petroleum Company, Incorporated
General Petroleum Corporation of California, (Delaware) producing, refining, and marketing
General Petroleum Corporation (Nevada) Inactive
General Pipe Line Company of California, Inactive
Gilmore Snyder Company
General Terminal Company
Southwestern Wharf Company
Socony Paint Products Company
Socony Vacuum Oil Corporation
Spencer Petroleum Company
Standard Oil of New York (Delaware)
The Island Development Company
Wadhams Oil Company, (Wisconsin) refining and marketing
White Eagle Oil Purchasing Company, Incorporated

Company holds controlling interest in the following subsidiaries:

Bavarian Oil and Gas Corporation, Inactive
Independent Oil Company, Incorporated at Pennsylvania, marketing
Magnolia Petroleum Company, producing, refining, and marketing
Harrison Oil Company
Magnolia Pipe Line Company
Magnolia Radio Corporation
Safety Casualty Company
Matin and Schwartz, Incorporated (Voting trust agreement governs indirect ownership of stock
Precision Development Company

Also as of December 31, 1945, company reported the following foreign subsidiaries but the

percentage of voting control was not specified:

Brilliant Transportation Company, Panama
Compagnie Commerciale des Petroles, Roumania
Compania Socony-Vacuum Oil Company de Colombia, Colombia
Compagnie des Huiles "Sinco", France
Compagnie Industrielle de Petroles, France
Compagnie Industrielle des Petroles au Marco, Morocco
Compagnie Industrielle de Petroles de l'Afrique du Nord, S.A., Algeria
Mazout-Transports, France
"Sinclair" Compagnie Franco-Americaine des Combustibles Liquides, France
Compania Comercial Vacuum S.A., Mexico
Deutsche Vacuum Oel A.G., Germany
Erdolbergbar A.G., Germany
Gibraltar Vacuum Oil Company, Limited, Gibraltar
Naftaspol, A.S., Czechoslovakia
Norsk Vacuum Oil Company, A/S Norway
O/Y Vacuum Oil Company, A/B Finland
Raffineria di Napoli, SAI Italy
Societa Impianti Prouviste Olii Mineral, S.I.P.O.M.
Raffineries de la Vacuum Oil Company, S.A.F. France
Socony-Vacuum Oil Company of Canada, Limited
Socony-Vacuum Transportation Company, Limited, Canada
Standard Transportation Company, Limited, Hong-Kong, Inactive
Standard-Vacuum of Croatia, Incorporated, Jugoslavia
Vacuum Olii Maatschappij, N.U. Holland
Vacuum Oil Company A.B. Sweden
" " " A.G. Austria
" " " A/S Denmark
" " " A.G. Switzerland
" " " A.S. Czechoslovakia
" " " (Ireland) Limited, Eire
" " " Limited, England
" " " of Canary Islands
" " " SAE Canary Islands
" " " R.T. Hungary
" " " S.A. Poland

Vacuum Oil Company S.A.B. Belgium
" " " SAdR Roumania
" " " SAE Spain
" " " SAF France
Vacuum Societa Anomima Prodotti Petroliferri, Italy
Seventeen unnamed subsidiaries
Eight unnamed subsidiaries of subsidiaries

Company and subsidiaries comprise an integrated unit in the petroleum industry. Engages in the acquisition, development, and operation of oil lands; in the transportation and refining of crude oil; in the distribution and marketing at wholesale and retail of petroleum derivatives.

Prior to the Second World War, company and subsidiaries, in addition to widespread activities in the United States, operated refineries in ten European countries, carried on exploration and production in eight foreign countries and marketing operations in more than forty foreign countries (except Russia). Company estimates that of the consolidated net income (excluding dividend from Standard-Vacuum Oil Company) the following percentages arose from foreign operations: 1937-20%; 1938-24%. In 1939, some 28.7% of the barrels of crude oil and products sold were sold in foreign markets. At the close of 1939, the balance sheet value of the net worth of all investments and assets abroad in all countries was $206,000,000. Consolidated net income for 1939 included about $13,500,000 (after reserves) for operation of subsidiaries and branches abroad and dividends received from companies operating abroad.

Net profit in 1941 included an estimated total of $13,000,000 (1940-$16,000,000) (after all reserves) from foreign sources. This figure consists of estimated profits in the United States from exports abroad and from foreign shipping, earnings received in dollars from foreign operations, and dividends from foreign investments. Foreign assets (net) in the December 31, 1945

balance sheet aggregated $142,951,000 (1944, $112,000,000; 1943, $118,000,000; 1942, $129,000,000; 1941, $147,000,000; 1940, $202,000,000) before a $70,000,000 in 1944, 1943, and 1942 (1941, $82,000,000; 1940, $75,000,000) special contingency reserve. The reserve was restored to surplus in 1945.

In the United States owned or leased on December 30, 1945, 135,083 acres of proven oil and gas lands and 10,793,342 acres of unproven lands. This was spread over 32 states. Company owned a total of 10,120 producing oil wells on December 31, 1945, plus 178 wells that were shut-in on properties in Texas, Oklahoma, California, Kansas, Louisiana, New Mexico, Illinois, Michigan, Arkansas, Kentucky, Mississippi, Wyoming, and Indiana, of which the first seven states were of principal importance. In addition, the company had 235 producing gas wells and 88 shut-in gas wells.

Transportation and storage: In the United States at December 31, 1945, owned and operated 3,043 miles of crude gathering pipe lines and 5,864 miles of crude trunk lines, the maximum trunk line capacity exceeding 539,840 bbls. daily. Also had 266 miles of gasoline gathering and trunk pipe lines, and 599 miles of natural gas gathering pipe lines. The crude oil gathering pipe lines are located in the states of Texas, Oklahoma, New Mexico, Illinois, Louisiana, Arkansas, Pennsylvania, California, Kansas, and Wyoming. Also in the United States, owned 2,249 tank cars, 6,294 motor vehicles, and eight airplanes. In domestic service, had 17 self-propelling barges, 91 towing barges, and 16 tugs and 18 launches. Tankers: U.S. flag, 20; Panama flag, one. In the United States, had steel tankers with a capacity of 46,622,292 bbls. of crude oil and 54,350,296 bbls. of other products. Also had concrete reservoirs with a capacity of 6,905,203 bbls. of crude oil. Owned or leased storage facilities abroad.

Owned 15 refineries in United States with total daily capacity of 418,390 bbls. crude.

Owned ten operating refineries in Europe as of December 31, 1938 with total daily capacity of 25,400 bbls. crude.

In the United States, the company owns or leases 3,022 wholesale distributing plants. Also operates 71 retail service stations. (company has 35,641 dealers who handle company products). Also makes sales directly to various industrial, commercial, and private customers.

Outside the United States, company, certain foreign subsidiaries, and affiliates normally are engaged in marketing in all foreign countries, including the European countries with the exception of Russia.

Standard-Vacuum Oil Company normally is engaged in the producing, refining, and marketing of petroleum products in the Far East as well as South Africa and Australasia.

Net crude production United States, 1945 equaled $61,584,518.

Total assets as of December 31, 1945 equaled $1,043,665,369.

MID-CONTINENT PETROLEUM CORPORATION[14]

Incorporated in Delaware, July 9, 1917, as Cosden and Company, and offered to acquire through the issuance of its securities the securities of Cosden and Company (an Oklahoma corporation organized in 1913 which was engaged in oil refining) and the securities of Cosden Oil and Gas Company (an Oklahoma corporation organized in 1916 which operated producing properties), and subsequently did acquire a substantial majority of the securities of each company. Name was changed to Mid-Continent Petroleum Corporation on February 21, 1925.

Is an operating and holding company, owning as of December 31, 1945, 100% voting control of Mid-Continent Pipe Line Company, Oklahoma, which operates a pipe line.

Also as of December 31, 1945, owned 60% voting control of Baker Oil Company, Arkansas, and 18.96% interest in capital stock of Great Lakes Pipe Line Company.

Company and subsidiaries comprise an integrated unit in the petroleum industry. They are engaged in acquiring and developing prospective and proven oil lands; in producing petroleum; in the transportation of petroleum by pipe line; in the refining of crude oil; in the transportation and marketing of refined products. Also operate plants for the extraction of casinghead gasoline from natural gas. Company's activities are carried on in the central portion of the United States.

As of December 31, 1945, the company owned either the working interest or a royalty on 43,330 acres of producing oil and gas leases, located in Oklahoma, Kansas, Texas, Arkansas,

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[14] Ibid., p. 845.

and New Mexico having 1,561 oil wells and 33 gas wells. In addition, the company had 775,631 acres of undeveloped oil and gas leases located in the states of Oklahoma, Kansas, Texas, New Mexico, Arkansas, Illinois, Nebraska, Louisiana, and Mississippi.

Company owns 1,344 miles of pipe, and storage facilities for about two million barrels of crude oil in Oklahoma, 2,106 tank cars.

Company owns a refinery at West Tulsa, Oklahoma, situated on a tract of about 768 acres of land. The refinery has a capacity of over 27,000 bbls. of crude oil per day, and manufactures a full line of products.

At last report, company owned five casinghead gasoline plants located at various points in Oklahoma.

Company and subsidiaries own or lease bulk and service stations in the states of Oklahoma, Iowa, Kansas, Missouri, Nebraska, Indiana, Illinois, Arkansas, Minnesota, Wisconsin, Michigan, and Kentucky.

Net crude production for 1945 was $5,682,709, and as of December 31, 1945, total assets equaled $85,256,547.

NEW JERSEY ZINC COMPANY[15]

Incorporated October 30, 1880 in New Jersey as the New Jersey Zinc and Iron Company. Name changed to present title in 1897.

Principal products are zinc oxide, zinc sulphide pigments, slab zinc, rolled zinc, strip zinc, zinc alloys, zinc dust and speigeleisen.

Smelting capacity, over 100,000 net tons of slab zinc per year.

Mines are located in New Jersey, Virginia, Colorado, and New Mexico.

Company owns entire capital stock of the New Jersey Zinc Company (of Pennsylvania) operating plants at Palmerton and Freemansburg, Pennsylvania; Chestnut Ridge Railway Company; the Empire Zinc Company; the Bertha Mineral Company; the New Jersey Zinc Sales Company.

For 1945, net profit equaled $5,161,243, and total income, $6,186,243.

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15 Ibid., p. 513.

OHIO OIL COMPANY[16]

Incorporated in Ohio, July 30, 1887. Was an important producing unit in the so-called "Standard Oil" organization until the dissolution of the Standard Oil combination in 1911.

Is primarily an operating company but as of December 31, 1944, owned 100% voting control of the following:

The Rocky Mountain Gas Company, Wyoming, transporting, distributing natural gas
Billings Gas Company, Montana, transporting, distributing natural gas
Illinois Pipe Line Company of Texas, oil gathering lines
New Deal Oil Company
Ohio Oil Company of Georgia

As of December 31, 1944, had controlling interest in General Geo-Physical Company and Rock River Petroleum Company.

Company and subsidiaries engage in the prospecting for and production of crude oil and natural gas. Activities include the purchase and sale of crude oil. The organization transports crude oil and natural gas. To a lesser extent, it refines crude oil and markets refined products and natural gas. Business is all within the United States.

Oil and gas lands or leases in production are located in the states of: Ohio, Indiana, Illinois, Kentucky, New Mexico, Arkansas, Louisiana, Kansas, Oklahoma, California, Texas, Montana, Wyoming, Colorado, Michigan, and Florida.

At December 31, 1945, company held under lease and owned in fee 2,333,506 acres of land and at December 31, 1945, was operating 7,892 oil wells and 105 gas wells and in addition,

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[16] Ibid., p. 2192.

held interests in 794 oil wells and 17 gas wells operated by others. During 1945, 173 wells were completed of which 122 were producing oil wells, 16 gas wells, 35 dry holes.

For the year 1945, gross crude oil production was 36,734,026 barrels and net production 32,825,485 barrels.

Bulk plants and retail service stations owned in fee and held under lease are located in : Ohio, Michigan, Indiana, Illinois, Kentucky. At December 31, 1941, company's products were distributed through 130 bulk plants and 2,300 resale outlets.

As of December 31, 1945, total assets equaled $131,792,544.

PHELPS DODGE CORPORATION[17]

In 1917 for 430,000 (par-$100) shares of common stock, company acquired the assets of Phelps Dodge and Company, Incorporated, a holding company. These included the Burro Mountain Copper Company and the Stag Canon Fuel Company.

Is a holding and operating company, owning as of December 31, 1944, 100% voting control of:

Phelps Dodge Refining Corporation, New York, smelting and refining
  Phelps Dodge Refining Corporation of Illinois, sales
Phelps Dodge Copper Products Corporation, Delaware, fabricating
  American Tube Works, Incorporated
Moctezuma Copper Company, West Virginia, mining in Mexico
  Moctezuma Copper Company of Mexico, S.A., Mexico, mining in Mexico
Phelps Dodge Mercantile Company, New York, mercantile
New Cornelia Cooperative Mercantile Company, Arizona, mercantile
Dawson Fuel Sales Company, New Mexico, coal sales
Habirshaw Cable and Wire Corporation, New York, Inactive
Ajo Improvement Company, Arizona, utility
The Morenci Water and Electric Company
Tucson, Cornelia, and Gila Bend Railroad Company, Arizona, railroad
Upper Verde Public Utilities Company, Arizona, utility
Warren Company, Arizona, utility
Verde Tunnel and Smelter Railroad Company, Arizona, railroad
Cochis Publishing Company, Arizona, publishing

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[17] Ibid., p. 2580.

Burro Mountain branch includes about 5,700 acres of mineral lands and 4,000 acres of non-mineral lands in Grant County, New Mexico which produced about 2,300,000 pounds of copper in 1945.

The Stag Canon branch comprises soft coal mining operations in Colfax County, New Mexico, at Dawson. Company owns 10,500 acres of coal and grazing land and leases coal rights on 16,000 additional acres from Dawson Fuel Company, a subsidiary. The latter owns an additional 23,000 acres. Sales are handled by the Dawson Sales Company, a subsidiary, and are made largely to the Southern Pacific Company with the balance to domestic and industrial consumers. Coal production was 373,636 tons in 1945.

Phelps Dodge total income in 1945 was $33,184,903. As of December 31, 1944, total assets equaled $219,167,570.

Book values and related reserves at December 31, 1944:

	Book Values	Reserves
Coal mines	$1,123,664	$424,350
Buildings, machinery, etc.	$2,160,542	$1,983,822

PHILLIPS PETROLEUM COMPANY[18]

Incorporated in Delaware, June 13, 1917, to acquire the oil producing properties and business in Oklahoma and Kansas of Frank Phillips and L. E. Phillips who had been engaged in this business for over 12 years.

Subsidiaries:

Is an operating and holding company, owning, as of December 31, 1945, 100% voting control of:

Hydrocarbon Chemical Company
Independent Natural Gas Company
Phillips Colombian Oil Company
Phillips Magdalena Oil Company
Phillips Morales Oil Company
Phillips Venezuelan Oil Company
Standish Pipe Line Company, Delaware
Western Radio Telegraph Company, Delaware, Inactive
50% in each of four carbon black producers in Texas

Company started operations as a producer of crude oil and natural gas, being still engaged in the acquisition, development, and operation of petroleum lands.

In 1927, by acquiring a refinery, initiated a program of integration which led to the company being engaged in the transportation by pipe line of crude oil, natural gas, and refined petroleum products. In the transportation by tank car and motor truck of refined petroleum products, in the refining and processing of crude oil and natural gas, and in the distribution and marketing of crude oil, natural gas, and refined petroleum products, as well as of carbon black.

The company's producing and refining activities are conducted largely in the Mid-continent and

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[18] Ibid., p. 2672.

Texas areas, but the company's products are distributed in practically all states; shipments are also made to foreign areas.

Company owned at the end of 1945, in whole or part, 7,592 oil and gas wells and 4,466,758 acres of oil and gas land of which 400,088 acres were producing. Most are located in Texas, Oklahoma, and Kansas. Some are located in New Mexico and several other states.

As of December 31, 1945, total assets equaled $318,817,789.

POTASH COMPANY OF AMERICA[19]

Incorporated in Colorado July 31, 1931.

Engaged in prospecting for, mining, refining, and distributing potassium salts commonly known as sylvinite or manure salts, and potassium chloride or muriate. Production activities are carried on in New Mexico on lands covered by leases from the United States government. The mine had, as of June 30, 1945, a capacity of over 3,000 tons of ore per day and the refinery was producing over 1,000 tons per day of potassium chloride.

In 1944, company entered into certain oil activities and is currently engaged in drilling operations in Kansas, Oklahoma, and Texas, with production in Kansas and Oklahoma.

For the year 1945:

Sales	$12,693,661
Depreciation and amortization	550,894
Net income	1,817,651
Plant and equipment	4,007,154
Leaseholds	1,293,233
Patent development	77,825
Total assets	11,921,886
Total current assets	465,517
Net current assets	4,365,983

In 1942, company reached an agreement with the Bureau of Internal Revenue for income tax purposes, whereby a discovery valuation of ore reserves was established as of February 28, 1933. Such value at June 30, 1945, adjusted for depletion exceeded the (leasehold) valuation (above) carried on balance sheet by $7,868,643.

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[19] Ibid., p. 536.

PURE OIL COMPANY[20]

Incorporated in Ohio, April 9, 1914, as Columbus Production Company on April 21, 1914; name changed to the Pure Oil Company on July 1, 1920; charter perpetual.

Company is primarily an operating company, owning as of December 31, 1945, 100% voting control of the following:

American Oil Company, (Ohio) Inactive
Mountain State Gas Company, (West Virginia) pipe line
Muskingum Oil and Gas Company, (Ohio) producing
Ohio Cities Oil and Gas Company, Inactive
Pure Oil Company, (Arizona) Inactive
" " " (Maryland) "
" " " (New Jersey) Inactive
" " " (Pennsylvania) "
" " " (Texas) Inactive
" " " of Canada, Limited, Inactive
" " " of The Carolinas, Incorporated, (North Carolina) Inactive
Pure Oil Pipe Line Company, (Pennsylvania) Pipe line
Pure Oil Steamship Company, (Delaware) Inactive
Pure Transportation Company, (Ohio) Pipe line
Puritan Agency, Incorporated, (Ohio) Insurance agency
Puritan Agency Incorporated of Illinois, Insurance agency
Wabash Pipe Line Company, (Illinois) Inactive
West Harder Oil Company, Incorporated, (Virginia) Marketing
Woco Pep Company of Tuscaloosa, (Alabama) Marketing
Wooford Oil Company, (Alabama) Inactive

As of December 31, 1945, company owned controlling interest in the following:

Cape Fear Terminal Company, (North Carolina) Terminal

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[20] Ibid., p. 2676.

Colonial Oil Company, Incorporated, (Virginia) Marketing
Detroit Southern Pipe Line Company, (Michigan) Pipe line
The Mid-South Oil Company, (Ohio) Marketing
Orinoco Oil Company, (Delaware) Producing
Pure Oil Products Company (formerly Allen Petroleum Corporation) (Delaware) Marketing
Sabine Transportation Company, Incorporated, (Delaware) Transportation
The Seaboard Oil Company of Ohio, Marketing
Shaw Brothers Oil Company, (Florida) Marketing
Sherill Oil Company, (Ohio) Marketing
Toledo Northern Pipe Line Company, (Ohio) Pipe line
Van Salt Water Disposal Company (Texas) Service
Wooford Oil Company of Georgia, (Georgia) Marketing

Company and its subsidiaries are engaged in acquiring generally by lease or purchase, and developing prospective and proven oil and gas lands and interests therein; in producing, purchasing, transporting, refining, and selling petroleum and petroleum products.

Company has approximately 234,000 acres of land classified as developed. It has approximately 6,030 producing oil wells and approximately 283 producing gas wells. Company's oil production comes from wells located in the following states: West Virginia, Ohio, Michigan, Illinois, Kentucky, Kansas, Oklahoma, Mississippi, Louisiana, Texas, New Mexico, and California.

In addition to the developed acreage, company holds under lease or in fee, approximately 2,852,000 undeveloped acres.

Crude oil pipe line systems consist of approximately 1,307 miles of trunk and gathering lines and 45 pumping stations. Crude oil storage capacity in connection therewith, and in connection with the crude oil department is approximately 7,905,000 barrels.

Company owns one lake and seven ocean tankers, 58 barges, 15 tugs, and 1,034 trucks.

Company also owns five refineries. Operated refineries have a daily combined crude capacity of approximately 109,800 barrels.

Company operates four natural gasoline plants in Texas, Oklahoma, and West Virginia.

Company and subsidiaries operate 44 terminals, most of which are located on or adjacent to deep or inland waters. In addition, company has water terminal facilities in connection with four of its refineries.

Outlets for distribution of company's branded products consist principally of 877 bulk distributing plants and approximately 10,834 retail outlets owned or controlled and operated in 27 states.

Net production for 1945 equaled 29,212,000 barrels.

Total assets at December 31, 1945 equaled $210,851,792.

RICHFIELD OIL CORPORATION[21]

Incorporated in Delaware, November 14, 1936. Company was formed pursuant to a plan of reorganization for Richfield Oil Company of California (a Delaware corporation organized August 2, 1926 to acquire the United Oil Company, a California corporation, and Richfield Oil Company, a California corporation) including a plan of reorganization for its subsidiary, Pan American Petroleum Company (a California corporation organized in 1916). The plan also provided for the issuance of securities to Rio Grande Oil Company (a Texas corporation organized in 1915) in consideration of the transfer of the business, properties, and certain of the assets of Rio Grande Oil Company, and certain underwriting agreements by Rio Grande and its parents, Consolidated Oil Corporation and Cities Service Company. Company issued its securities for allowed claims of bondholders and unsecured creditors against Richfield Oil Company of California and Pan American Petroleum Company for afore-mentioned business and properties of Rio Grande Oil Company, for underwriting, and for cash.

Subsidiaries:

Is primarily an operating company, owning as of December 31, 1944, 100% voting control of the following:

Pacific Marine Oil Company, (California)
Inactive
Pan American Petroleum Company of California,
Inactive
Rio Grande Gasoline Company, (California)
Inactive

Company has no parent but Sinclair Oil Corporation owns 30.513% of its common stock and

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[21] Ibid., p. 2591.

Cities Service Company 29.11% of same. Sinclair also owned 30.72% of common stock purchase warrants and Cities Service Company 30.162%.

Company and subsidiaries are engaged in all branches of the petroleum industry including producing, refining, transporting, and marketing of petroleum and its related products. Operates primarily on the Pacific Coast.

As of December 31, 1945, company held 172,995 acres of proven and prospective oil lands in California of which 28,135 acres were owned in fee; also held leases on 245,866 acres of prospective but undeveloped oil and gas lands in New Mexico, Texas, Oregon, and Washington.

Total crude oil reserves as of December 31, 1945 exceeded 220,000,000 barrels not including yet undetermined reserve of new field east of Los Angeles.

Principal refinery is located at Wetson, (near Wilmington) California; also has a refinery at Vinale.

Company also has two natural gasoline plants in California, and distributes in California, Oregon, Washington, Nevada, Idaho, and Arizona.

Total crude oil production for 1945 equaled 10,936,000 barrels.

As of December 31, 1945, total assets equaled $110,181,672.

ST. LOUIS, ROCKY MOUNTAIN AND PACIFIC COMPANY[22]

Incorporated under the laws of New Mexico, 1905. Charter limits corporate existence of company to 50 years, but the company may extend its corporate existence by vote of two thirds in interest of stockholders having voting powers for such period as may be lawful and proper at time extension is made.

Company owns in fee 210,405 acres located in northern New Mexico coal region and in addition, owns the coal rights on 329,961 acres. Company has producing capacity of 1,000,000 tons of bituminous per annum; also 584 coke ovens (idle since 1920) with producing capacity of 250,000 tons annually.

Mines are located at Van Houten, Koehler, and Brilliant, New Mexico, coking plants at Gardiner and Koehler.

Subsidiary: Company owns entire stock of Raton Coal Company. St. Louis Construction and Equipment, formerly a wholly owned subsidiary, was dissolved in 1941.

For 1945, net sales equaled $2,552,778 and net income, $278,258.

As of December 31, 1945, total assets equaled $5,724,146. Coal lands were valued at $3,907,033 after depletion of $271,874.

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22 Ibid., p. 1090.

SHELL UNION OIL CORPORATION[23]

Incorporated in Delaware, February 8, 1922 to consolidate substantially all the properties of Royal Dutch Shell and Union Oil Company (Delaware) in the Mid-continent and California oil fields.

Parents:

Some 65.44% of company's common stock was owned as of December 31, 1945 by the Batawan Petroleum Company of Netherlands West Indies which in turn was 60% owned by Royal Dutch Company for the working of petroleum wells in the Netherlands West Indies, Willemstad, Coracao, Netherlands West Indies, and was 40% owned by the Shell Transport and Trading Company, Limited, London, England.

Subsidiaries:

As of December 31, 1945, company owned 100% voting control (unless otherwise indicated) of the following:

Shell Oil Company, Incorporated, (Virginia) production, refining, and marketing
- Washington Refining Company, marketing properties in Washington
- Shell American Petroleum Company (49.87%) marketing in Indiana
- Hooper Oil Company (Inactive)
- Petroleum Producers Company (Inactive)
- United Producers Company (Inactive)
- Fain Mebaha Oil Corporation (Inactive)
- Shell Oil Company of Georgia (Inactive)
- Gasco Motor Fuel Company, Limited (Inactive)

Shell Pipe Line Corporation, pipe lines

Shell Chemical Corporation, (Delaware) chemical products

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23 Ibid., p. 2862.

Company also owned as of December 31, 1945, 50% of the voting stock in each of the following companies:

Shell Development Company, (remainder held by Batawan Petroleum Company, a parent) engaged in petroleum research

Shell Oil Company of Canada, Limited, (remainder held by Anglo Saxon Petroleum Company, Limited, an affiliate) engaged in refining and marketing in Canada; also owns all voting stock of Shell Canadian Tankers, Limited

Shell Oil Company of British Colombia, Limited, refining, marketing in Canada

Company also has 23.3% interest in Plantation Pipe Line Company for transportation of refined products from Baton Rouge, Louisiana to Greensboro, North Carolina. Remaining interest in this company is owned by Standard Oil Company (New Jersey) and Standard Oil Company of Kentucky.

Company and subsidiaries comprise an integrated petroleum enterprise. Engages in the acquisition and development of oil and gas lands, in the production, purchase, sale, transportation, and refining of crude oil and the transportation and marketing of its products. Also engages in the manufacture and sale of chemical products and the production, transportation, treatment, and sale of natural gas but does not retail natural gas.

The organization operates primarily in the United States although a 50% owned affiliate, Shell Oil Company of Canada, Limited, operates a refinery at Montreal and markets in eastern and central Canada, and a subsidiary of the affiliate operates a refinery at Vancouver, British Columbia, and markets in western Canada.

Sales of crude oil and refined products for export other than to Canada, constituted ap-

proximately 6.5% of gross sales in the year 1939 and in nine months to September 30, 1940.

Company holds 17,446 acres as non-producing land in New Mexico, 7,979 acres producing land, and 131 wells.

Company owns in the United States, a total of 3,510,579 acres non-producing, 202,890 as producing, and 7,089 wells.

As of December 31, 1945, company owns aggregate mileage of pipe line equal to 6,429 miles.

As of the same date, total assets equaled $426,917,437.

SINCLAIR OIL CORPORATION[24]

Incorporated in New York, September 23, 1919, as a consolidation of Sinclair Oil and Refining Corporation, Sinclair Gulf Corporation, and Sinclair Consolidated Corporation. Name was changed from Sinclair Consolidated Oil Corporation to Consolidated Oil Corporation on March 31, 1932, and changed to present title May 19, 1943.

Corporation is exclusively a holding company. On December 31, 1945, the subsidiaries in which 100% voting power was held were the following:

Sinclair Oil Company (Venezuela)
Sinclair Prairie Oil Company, (Maine) production and crude purchasing
Sinclair Wyoming Oil Company, (Delaware) production
Repollo Oil Company, (Wyoming) production
Sinclair Refining Company, (Maine) refining, marketing, transportation by pipe line and tank steamship
Richfield Oil Corporation of New York, (Delaware) marketing
Sherwood Brothers, Incorporated, (Maryland) marketing
Consolidated Casualty Insurance Company (Texas)
Sinclair Cuba Oil Company, S.A., (Delaware) marketing

Subsidiaries in which voting control of less than 100% was held were as follows:

Southwestern Development Company (51.0%) Colorado, holding company
Amarillo Oil Company, Texas, gas pipe line
Amarillo Gas Company, Texas, distributes natural gas
Panhandle Pipe Line Company, Texas, gas pipe lines
Red River Gas Company, Delaware, natural gas leases

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24 Ibid., p. 2591.

West Texas Gas Company, Delaware, distributes natural gas
Dalhart Gas Company, Texas, distributes natural gas
Clayton Gas Company, New Mexico, distributes natural gas
Canadian River Gas Company, Delaware, natural gas leases and pipe lines
Venezuelan Petroleum Company, (85%) Delaware, exploration
Compania Consolidada Petroles

Through subsidiaries, engages in all the phases of the petroleum industry, including the production of crude oil and natural gas, the transportation of crude, its products, and natural gas, the refining of crude oil and the marketing of oil products and natural gas. Activities are primarily in the United States.

In the United States, subsidiaries held as of December 31, 1944, approximately 205,000 acres of producing oil and gas lands located in Texas, Louisiana, Oklahoma, Kansas, New Mexico, Wyoming, Mississippi, and Illinois. There were 10,000 producing oil wells and 283 producing gas wells; also had approximately 5,580,000 acres of undeveloped lands.

At December 31, 1945, Sinclair Oil Company, a subsidiary, held 932,165 acres of exploration concessions in Venezuela and 855,432 acres of exploitation concessions. In addition to this acreage, the government accepted applications for additional exploitation concessions totaling 49,052 acres.

A subsidiary, Venezuelan Petroleum Company, owns royalty interests in producing oil and gas concessions in Venezuela and its subsidiary holds substantial acreage of concessions on which commercial drilling was begun in 1941.

A subsidiary, Sinclair Prairie Oil Company, owns steel tankage for the storage of about 7,500,000 barrels of crude oil located principally

in Kansas, Texas, and Oklahoma.

Company owns in the United States about 6,300 miles of crude oil gathering pipe lines and about 6,600 miles of trunk lines. These systems service fields in Kansas, Oklahoma, Texas, Wyoming, and New York.

As of December 31, 1945, total assets equal $456,090,243.

SKELLY OIL COMPANY[25]

Incorporated in Delaware, August 20, 1919, and on October 2, 1919, acquired certain leases and other property from W. G. Skelly as well as the outstanding stock of the Skelly-Sankey Oil Company.

Company is principally an operating company but as of December 31, 1945, owned 100% voting control of the following:

Skelco Products Company, Missouri, auto accessories
Perry Petroleum Company, Colorado, refinery

Also as of December 31, 1945, owned less than 100% voting control of the following subsidiary:

Community Service Station Company, (98.84%)
South Dakota, Inactive

As of December 31, 1945, 59.37% of company's common stock was owned by Mission Corporation. Mission Corporation in turn was a subsidiary of Pacific Western Oil Corporation which owned 46.67% of the voting stock. Pacific Western Oil Comporation in turn was controlled by George F. Getty, Incorporated, which owned 80.14% of the voting stock. George F. Getty, Incorporated, was in turn controlled by J. Paul Getty, who owned 40.62% and Thomas A. Dockweiler, Trustee, who owned 59.38% of the voting control.

Company comprises an integrated unit in the petroleum trade. It is engaged in the acquisition, exploration, and development of oil and gas lands; in the production, purchase, sale, and transportation by pipe line of crude oil; in the production, purchase, and sale of natural gas, casinghead gas, and products derived therefrom; in the refining of crude oil and in the marketing at wholesale and

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[25] Ibid., p. 2001 and 2936.

retail of refined oil products and motorists' supplies.

At December 31, 1945, company owned wholly or in part, 3,033 producing wells--2,870 oil wells and 163 gas wells--on 919 properties embracing 161,049 net acres in various fields in Arkansas, Illinois, Kansas, Louisiana, Mississippi, Nebraska, New Mexico, Oklahoma, Texas, Montana, and Wyoming. In addition to its producing properties, company held at December 31, 1945, undeveloped leases in these states and in Alabama, Colorado, Indiana, Kentucky, Missouri, and Michigan, on a total of 1,706,062 net acres and royalty interests on 26,136 net acres.

Company's net proved and drilled crude oil reserves as of December 31, 1939, were estimated by Mr. E. DeGolyer (official position not given) at 77,719,300 barrels and net proved and indicated but undrilled reserves at 131,038,234 barrels, a total of 208,757,534 barrels. Proved crude oil reserves, December 31, 1944, equaled 185,100,000 barrels.

Company owns a plant in New Mexico (one of 13) for extraction of natural gasoline from natural gas and casinghead gas.

As of December 31, 1945, total assets equaled $92,957,544.

SOUTHERN UNION GAS COMPANY[26]

Incorporated in Delaware, December 13, 1932, as Southern Union Utilities Company; name changed to Texas Southwestern Gas Company November 1, 1940. Under plan of merger, refinancing and recapitalization filed with SEC under provisions of Public Utility Holding Company Act January 5, 1942, and consummated November 24, 1942, former Southern Union Gas Company (incorporated in Delaware January 17, 1929) and two of its subsidiaries, New Mexico Gas Company and New Mexico Eastern Gas Company were merged with Texas Southwestern Gas Company (also a subsidiary of former Southern Union Gas Company) and name changed to Southern Union Gas Company.

As a result of merger, company acquired all assets and assumed all liabilities of former Southern Union Gas Company, New Mexico Gas Company, and New Mexico Eastern Gas Company, and Southern Union Service Company, Southern Union Gas Company (Texas) and Southern Union Gas Company (New Mexico), subsidiaries of former Southern Union Gas Company, were liquidated.

On January 26, 1944, company purchased gas distribution system and business serving about 17,000 customers at El Paso, Texas from Lone Star Gas Company, for $2,700,000.

In late 1944 and early 1945, company acquired undivided working interests in certain oil and gas leases covering about 14,500 acres in Franklin and Richland Parish, Louisiana. Development of this property was begun shortly thereafter, and on October 27, 1945, organized Delhi Oil Corporation (formerly Southern Union Development Company). Subsequently all interest was transferred to Delhi in exchange for its common stock. Interest in Delhi was sold in 1946.

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26 John Sherman Porter, Moody's Public Utilities, op. cit., p. 249.

SEC on September 19, 1942, ordered company to dispose of all its interests in Arkansas Western Gas Company and Quanah Water Company and in properties in central and southeastern Texas and Oklahoma. Southern Union Production Company, a subsidiary, was ordered to dispose of an oil well near Artesia, New Mexico. Order has been complied with.

On December 15, 1944, SEC entered an order declaring company ceased to be a registered holding company under the Public Utility Holding Company Act of 1935, and is now an operating company. However, the SEC retained jurisdiction until the company sold its Oklahoma properties, which sale was completed in 1945.

Company owns and operates all natural gas properties and other assets formerly owned and operated by New Mexico Gas Company, New Mexico Eastern Gas Company and Texas Southwestern Gas Company, supplying gas to 18 communities in New Mexico (wholesale to two communities), eight communities in West Texas, and in Juarez, Mexico. Gas is supplied for residential and industrial purposes, and is purchased under contracts with Southern Union Production Company, a wholly owned subsidiary, and with other independent natural gas and oil companies. Estimated population served is above 400,000.

Also supplies El Paso, Texas, (acquired January 26, 1944) with an estimated population of over 230,000.

Company also owns and operates a minor water and sewer business.

Properties of company comprise about 792.4 miles of gas transmission lines, about 699.9 miles of gas distribution lines, four gas compressor stations, and leases on gas producing territory with producing wells. Southern Union Production Company, subsidiary, owns 35 producing gas wells on 11,825 acres of developed leases in New Mexico and various undeveloped leases. In addition, company owns minor water and sewage plants with about 6.6 and 5.5 miles of lines respectively.

Natural gas for distribution in El Paso, Texas, is purchased under long term contract with El Paso Natural Gas Company, non-affiliated company which obtains its supply in Lea County, New Mexico.

Investments in securities of non-subsidiary companies at December 31, 1946 were as follows: (percentage of control in parenthesis)

Angels Peak Oil Company (87.43%)
Congress Oil Company (91.02%)
Southern Union Production Company (100%)
Summit Oil Company (81.25%)

Delhi Oil Corporation, (formerly Southern Union Development Company) a 100% owned subsidiary, was sold in June, 1946 for $944,000.

Gas and water business in all incorporated communities served in New Mexico and Texas is conducted under non-exclusive franchises. Company holds franchises, permits, and easements for gas operations for three counties in Texas and 13 counties in New Mexico, covering all operations outside incorporated communities, and in certain communities unincorporated when first served, except that no county franchises, permits, or easements are held for gas operations in four counties in Texas and one in New Mexico. Expiration dates of franchises in the various communities with population of 500 or over run from December 4, 1949, to January 13, 1980.

Company's operations in New Mexico are subject to jurisdiction of New Mexico Public Service Commission, in Texas to jurisdiction of the Railroad Commission of Texas or of governing bodies of municipalities or both. In any interstate business, company is subject to regulation by Federal Power Commission.

Gas sales for the year 1946 equaled $5,486,918.

As of December 31, 1946, total assets equaled $19,658,569.

STANDARD OIL COMPANY OF INDIANA[27]

Incorporated in Indiana, June 18, 1889. Prior to December 1, 1911, was a subsidiary of Standard Oil Company of New Jersey which distributed the stock to its own stockholders under a dissolution decree in a suit brought by the Government under the Sherman Anti-trust Act. Until 1917, was a holding company but in March of that year, charter was amended to permit direct operations. In May, 1931, was reorganized under the Indiana General Corporation Act.

Subsidiaries:

100% control is owned in the following:

Dradnats Incorporated, Illinois
Indoil Chemical Company, Delaware, Inactive
Mexican Petroleum Corporation of Louisiana, Inactive, Louisiana, in dissolution
Murphy Miles Oil Company, Illinois, marketing
Pan American Petroleum Corporation, Delaware, marketing and refining
Stanolind Oil and Gas Company, Delaware, producing, refining, and marketing
Crowley Oil and Mineral Company, Louisiana, producing. Assets acquired in May, 1946, by parent.
Dickey Oil Company, Delaware, producing
Permian Oil Corporation, Kansas, Inactive
Midwest Commissary Company, Wyoming, merchandising
Shannon Gas and Electric Company, Colorado, gas and electricity
Stanolind Building Corporation, Delaware, office building
Yount-Lee Pipe Line Company, Texas, pipe lines
Stanolind Oil Purchasing Company, Delaware, dealing in crude

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[27] John Sherman Porter, Moody's Industrial Securities, op. cit., p. 2362.

Stanolind Pipe Line Company, Maine, pipe line transportation
Superla Laboratories, Incorporated, Illinois, marketing

Controlling interest as of December 31, 1945:

Laramie Oil Company, Wyoming, marketing
Pan American Petroleum and Transport Company, Delaware, holding company
American Oil Company, Maryland, marketing
American Oil Company, Massachusetts, Inactive
Lord Baltimore Filling Stations Incorporated, Maryland, marketing
Mexican Petroleum Corporation, Maine, marketing
Pan-American Gas Company, Delaware, marketing
Pan-American Pipe Line Company, Delaware, pipe lines
Pan-American Production Company, Delaware, production
Pan-American Refining Corporation, Delaware, refining
Mexican Petroleum Corporation of Georgia, refining
Sweetwater Oil Company, Wyoming, marketing
Utah Oil Refining Company, Utah, transportation, refining, marketing, producing
Utah Oil Building Corporation, office building

Company and subsidiaries engage in the acquisition, exploration, and exploitation of crude oil lands; in the purchase and sale of crude oil; in the transportation and refining of crude; and in the marketing of refined products at wholesale and retail.

At the close of 1945, properties under lease comprised 8,487,163 acres, of which 126,508 were producing, 8,336,215 undeveloped, 24,440 proven but not developed.

The principal crude producing properties are located in the states of Kansas, Oklahoma, Texas,

New Mexico, Wyoming, and Louisiana.

Net production of crude oil in 1945 was 64,685,408 barrels, and company purchased 129,949,147 additional barrels.

Company owns storage facilities with a capacity of 106,889,186 barrels. None are located in New Mexico.

Pipe line subsidiaries owned 12,478 miles of trunk and gathering lines.

Company and subsidiaries carry on marketing operations in 40 states and the District of Columbia.

As of December 31, 1945, total assets equaled $127,862,531.

STANDARD OIL COMPANY OF TEXAS[28]

The Standard Oil Company of Texas is a wholly owned subsidiary of Standard Oil Company of California. It is listed as inactive in Moody's 1946 Manual of Investments. The following is a description of the Standard Oil Company of California:

> Incorporated in Delaware January 27, 1926, to acquire, subject to liabilities, properties and business of the Standard Oil Company (a California corporation which was organized in 1879) and to acquire all the producing properties, certain contracts and investments of the Pacific Oil Company. Issued 9,516,434 shares to stockholders of Standard Oil Company on the basis of share for share and issued 3,500,000 shares to Pacific Oil Company for distribution to its stockholders on a share for share basis. Both predecessors had been established units in the oil industry.
>
> In June, 1926, acquired properties of the Pacific Gasoline Company, including 28 natural gasoline plants. A new, wholly owned subsidiary, Standard Gasoline Company, was organized to operate the plants and additional plants owned by the company. In 1936, the latter was dissolved and its business taken over by the company.
>
> In December, 1927, organized as a wholly owned subsidiary, the Pasotex Petroleum Company to construct and operate a refinery at El Paso, Texas.
>
> During 1928, company relinquished all properties in Ecuador and Panama and its affiliated company, Latin American Petroleum Corporation of Colombia,

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28 John Sherman Porter, Moody's Manual of Investments, op. cit., p. 2285.

relinquished concessions in Colombia. Also in 1928, organized as a wholly owned subsidiary, the Pasotex Pipe Line Company to bring crude oil to the refinery of Pasotex Petroleum Corporation, another subsidiary.

In September, 1929, acquired control of Pacific Public Service Company in order to further development of and afford an additional market for company's growing supplies of natural gas. Also joined with Pacific Gas and Electric Company in the formation of Standard Pacific Gas Line, Incorporated, which constructed a 200 mile gas line from Kettleman Hills to northern California (San Francisco). Also entered into a long term contract to sell gas to Pacific Gas and Electric Company.

In 1930, joined with other holders of government leases in the formation of the Kettleman North Dome Association to operate as a unit certain properties in the Kettleman Hills area of California. Company's extensive fee lands at Kettleman Hills were not included but company entered into a contract with the association for the cooperative development of the field as a whole.

In 1930, joined with the Beacon Sun Company in the formation of the Coro Petroleum Company which, as of January 1, 1930, took over the Urumaco concessions on about 200,000 acres in the state of Falcon, Venezuela. Also in 1930, acquired an interest in the United Gasoline Corporation (subsequently known as Universal Oil Products Company) which owned valuable patent rights with regard to the manufacture of gasoline by cracking. Also at the close of 1930, transferred service stations to Standard Stations Incorporated, a new subsidiary organized for retail marketing. This unit was dissolved in 1936 and a new Standard Stations Incorporated was organized as a wholly owned management company.

In July, 1931, acquired a substantial share in California Spray Chemical Corporation which

California Company, California, exploration, production, wholesale, marketing, and pipe lines in Rocky Mountain, North Central, and Eastern Gulf states
Foreign Tankship Corporation, Panama, marine operations
Murphy Oil Company, California, producing properties in Wyoming
California Standard Oil Company, Limited, England, oil operations
California Oil Company, marketing in New Jersey, New York, Connecticut, Rhode Island, and Massachusetts
California Company, Texas, inactive
California Research Corporation, Delaware, research and development
California Petroleum Exploration Company, Delaware, exploration in Venezuela
California Pipe Line Company, Nevada, oil transportation in Wyoming
California Standard Company
Altuba Agencies Limited (72%)
California Standard Oil Company, Nevada, sales in Guatemala and El Salvador
California Standard Oil de Mexico, Delaware, formerly sales in Mexico
Central Counties Company, inactive
Cia Commercial California, S.A., distributes oil products in Mexico
Cia Colombiana de Petroleo El Meta, S.A., Colombia, oil properties
Cia Colombiana de Petroleo Occidental, S.A., Colombia, Inactive
Cia Colombiana de Petroleo Santander, S.A., Colombia
Cia Colombiana de Petroleo Sierra Nevada, S.A., Colombia, oil operations
Cia Colombiana de Petroleo Tolina, S.A., oil operations
Cia de Petroleo Antioquin, S.A.
Cia de Petroleo Atlantico, S.A.
Cia de Petroleo Caldas, S.A.
Cia de Petroleo Condinamarca, S.A.

represented a reorganization of the California Spray Chemical Company. This unit made patented oil sprays used as agricultural and horticultural insecticides. During 1934, the company increased its share interest to approximately half.

On July 1, 1935, a new subsidiary, Standard Oil Company of British Columbia, Limited, commenced sales operations in British Columbia through newly purchased and constructed facilities. Subsequently extended operations throughout Western Canada and, in addition, in 1940 discovered oil in the Great Plains region in Alberta.

In 1936, a subsidiary, Standard Pipe Line Company (a California corporation) changed its name to the California Company and acquired properties in Colorado, Montana, Louisiana, Wyoming, and North Dakota belonging to another subsidiary, the California Company (a Montana corporation). Also a wholly owned subsidiary, Standard Oil Company of Texas, acquired the Texas and New Mexico properties of the California Company (a Montana corporation). Also a wholly owned subsidiary, Murphy Oil Company, acquired the Quealy Dome Structure in Wyoming from the California Company (a Montana corporation).

During the latter part of 1937, a wholly owned subsidiary, Standard Oil Company of Texas, acquired marketing facilities in New Mexico of another wholly subsidiary, Standard Oil Company of California (a Utah corporation) and marketing facilities in Texas of another wholly owned subsidiary, Standard Stations Incorporated (a Maryland corporation). The latter concern was dissolved.

Subsidiaries:

Primarily an operating company but also a holding company.

California Asphalt Corporation, refining asphalt at Portland, Oregon

California Commercial Company, Incorporated, New York, service

California Ecuador Petroleum Company, exploration in Ecuador

Cia de Petroleo Navino, S.A.
Far Eastern Petroleum Company, Limited, Bahamas, holding company
  California Colombia Petroleum Company, Limited, (50%) inactive
  California Eastern Company, Limited, (50%) England, investments in India
  California Magdalena Petroleum Company, Limited, (50%) inactive
  California Standard Exploration Company, Limited, England, (50%) investments in Egypt (other 50% of all four above held by company)
Federal Engineering Corporation, California, investments
  Pacific Tankers Incorporated, (60%) operates tankers
  Central Counties Company
International Bitumen Emulsions Corporation, Delaware, asphaltic emulsions, North and South America and Far East
  Canadian Bitumuls Company, Limited (85.14%)
Minerals and Metals Associates, Incorporated
Monterey Engineering Company
Muruale Oil Company, California, produces oil in California
Oronite Chemical Company, Delaware, industrial chemicals
Pacific Coast Company, inactive
Pacific Oil Company, California
Pacific Oil Company, Delaware, inactive
Pacific Oil Company, Oregon, inactive
Pasotex Petroleum Company, inactive
Pasotex Pipe Line Company, Delaware, transportation in West Texas
Richmond Exploration Company, exploration in Venezuela
Richmond Pacific Company
Richmond Petroleum Company
Richmond Petroleum Company of Colombia, Delaware, exploration in Colombia
Richmond Petroleum Company of California, exploration and management in South America

Richmond Petroleum Company of Mexico, S.A., Mexico, formerly developing in Mexico
Richmond Petroleum Company of Venezuela, Delaware, prospecting and developing in Venezuela
Coro Petroleum Company, (50%) Delaware, exploration in Venezuela*
Stanave Specification Board, Incorporated
Standard Gas Company, Idaho, oil and gas transportation in California
Standard Gasoline Company
Standard Management and Operating Corporation, inactive
Standard Oil Company of Alaska, operates U.S. government-owned pipe line "Canol Project" and refinery in Canada and Alaska
Standard Oil Company, Arizona, inactive
" " " Idaho, inactive
" " " Oregon, "
" " " Texas, "
" " " Utah, "
" " " Washington
" " " of British Columbia, Limited, refining, marketing in western Canada, British Columbia
California Standard Company, exploring and producing in Alberta
Dominion Oil Company, Limited, inactive
Fuel Oil Sales, Limited, inactive
Island Pacific Oil Company, Limited, inactive
Signal Oil Company, Limited, inactive
Standard Stations, Limited, inactive
Standard Oil Company of California, Utah, inactive
Standard Oil Company of Delaware, inactive
Standard Oil Company of Texas, Delaware, exploring, producing, and marketing in California, New Mexico, and Texas, refinery in Texas

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*Remaining 50% of stock owned by another person with whom control and management is exercised jointly.

Kettleman and Inglewood Corporation, (50%) inactive*
Kettleman Oil Corporation, Limited, (50%) Delaware, inactive*
Standard Oil Company of Utah, inactive
Standard Oilfields, Limited, inactive
Standard Pipe Line Company, inactive
Standard Stations, Incorporated, Delaware, operation of service stations in seven western states.

Also owned as of December 31, 1944, less than 100% voting control of the following subsidiaries:

American Bitumuls Company, (98.24%) Delaware, manufacture and sale asphaltic emulsions in U.S. and Puerto Rico
American Gilsonite Company, (50%) jointly with Barber Asphalt Company, owns gilsonite land in Utah and Colorado
American Overseas Petroleum Company, (50%) exploration and management in Netherlands East Indies
Arabian American Oil Company (formerly California Arabian Standard Oil Company) (50%), Delaware, exploration, producing, refining, and marketing in Saudia Arabia (remaining 50% of stock owned by another person with whom control and management is exercised jointly)
California-Texas Investments Limited, (50%) New Zealand, investments in New Zealand
California Columbia Petroleum Company, Limited, (50%) inactive**
California Eastern Oil Company, Limited, (50%) England, investments in India**
California Magdalena Petroleum Company, Limited, (50%) inactive**

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*Remaining 50% of stock owned by another person with whom control and management is exercised jointly.

**50% owned by company and 50% by its subsidiary, Far Eastern Petroleum Company.

California Spray-Chemical Corporation, (59.87%) chemical sprays
Orthotec, Incorporated, inactive
San Jose Spray Manufacturing Company, inactive
California Standard Exploration Company, Limited, England, (50%) investments in operating company in Egypt*
South Mediterranean Oil Fields, Limited, (50%) exploration in Egypt (operations discontinued in 1945)
Egyptian Desert Petroleum Company, Limited, inactive
Societe California Egyptienne des Petroles, inactive
California-Texas Refining Company, (62.5%) Delaware, producing refining, and marketing in Texas
Cia Colombiana de Petroleo Eldorado, S.A., (50%) oil explorations in Colombia**
Canpact Filtration Company, (73%) Delaware, exploitation of patents in U.S.
Huntington Beach Company, (63.57%) California
Huntington Beach Cemetery Association
N.V. Nederlandsche Pacific Petroleum Maatschappij, (50%) The Netherlands, exploration in Dutch East Indies**
N.V. Petroleum Maatschappij Sadjira, oil concessions in Java
Standard Oil Company, California, (95.88%) inactive
Standard Pacific Gas Line, Incorporated (14.28%)***
The Bahrein Petroleum Company, Limited, (50%) Canada, exploring, producing, and refining on Bahrein Island in Persian Gulf**
Balboa Transport Corporation

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*50% owned by company and 50% by its subsidiary, Far Eastern Petroleum Company.

**Remaining 50% of stock owned by another person with whom control and management is exercised jointly.

***35.72% held by Pacific Public Service Company, 50% by Pacific Gas and Electric Company, and 14.28% owned by Standard Oil of California.

California Texas Oil Company, Limited, holding company
Bitumen and Australian Oil Refineries Limited, (40%) refining in Australia
California Asphalt Products Proprietary, Limited
California Texas Oil Company (overseas) Limited
Caltex Oil (Aden), Limited
Caltex (Africa), Limited
Caltex (Ceylon), Limited
Caltex (India), Limited
Caltex, Limited, (Australasia)
Caltex (Australia) Oil Development Proprietary, Limited
Texas Company (New Zealand), Limited
Caltex (Philippines), Incorporated
Caltex Queensland Proprietary, Limited
Ceylon Petroleum Company, Limited
N.V. Nederlandsche Pacific Tankuaart Maatschappij
Societe California Texas des Petroles
Texas Company (China), Limited, marketing
The Texas Shipping Company (China), Limited
Pacific Public Service Company, (48.12%) California, holding company*
Arrowhead and Poritas Waters, Incorporated, California, sells bottled water
Coast Counties Gas and Electric Company, California, (51.74%) sells electricity and gas
Coast Industrial Gas Company, Delaware, purchase and sale of natural gas
Gas Lines Incorporated
Natural Gas Corporation of California, oil and gas lands
Standard Pacific Gas Line, Incorporated, (35.72%) (35.72% held by Pacific Public Service Company, 50% by Pacific Gas and Electric, and 14.28% by Standard Oil Company of California)

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*Balance of voting power distributed among a large number of stockholders.

Company holds an option to purchase for a nominal consideration, the entire voting stock of Murphy-Dillen Pipelines, Limited. Although all officers and directors of this company are officers and directors of Standard Oil Company of California, latter disclaims existence of effective control.

Company, subsidiaries, and affiliates comprise an international unit in the petroleum industry. The business covers the acquisition, development and operation of oil and gas lands in the United States and foreign countries. It includes the transportation of oil and gas by pipe line, the transportation of crude oil and its products by tank steamers. Natural gas is processed for natural gasoline and crude oil is refined for the production of some 500 marketable products.

Company's main business is within the United States but it has important and extensive foreign interests. Since the company consolidates in its financial statements only the wholly owned subsidiaries operating in the United States, foreign interests are reflected in the balance sheet item of investments, which on December 31, 1945, included $40,759,510 for securities and advances to wholly owned subsidiaries operating in foreign countries and $42,858,062 for securities and advances to 50% owned (or less) associated companies operating in foreign countries, a total of $83,617,572 (after reserves). The above items apparently accounted for most, but not necessarily all of the company's foreign interests.

At December 31, 1945, company and wholly owned subsidiaries held 3,068,584 acres of developed and undeveloped oil lands under fee, lease, mineral rights, or operating agreement in the United States.

Outside the United States, wholly owned subsidiaries held a total of 3,997,377 acres of oil lands.

In addition to the above, company through several associated companies had 50% interest in following acreage of developed and undeveloped oil lands:

	Contract
Saudia Arabia	278,272,000
Bahrein Island	100,000
Colombia	123,552
Venezuela	45,885
Total	278,541,437

Company operates 20 natural gasoline plants in United States and three refineries plus one by wholly owned Standard of Texas with total daily capacity (for the four) of 239,000 barrels of crude. Have been recently enlarged and are now capable of producing high octane gasoline, toluene, and butadiene.

A partially owned subsidiary, Cal-tex Refining Company, owns and operates a refinery of 10,000 barrels daily capacity at Colorado, Texas. In addition, a wholly owned subsidiary, Standard Oil Company of British Columbia, Limited, has a refinery located near Vancouver, British Columbia, with a daily capacity of 4,300 barrels of crude oil. Also, a 50% owned affiliate, Bahrein Petroleum Company, Limited, has a refinery on Bahrein Island, Persian Gulf (its 1944 crude oil runs averaged 60,000 barrels daily), and 50% owned affiliate, Arabian American Oil Company (formerly California Arabian Standard Oil Company) has a refinery of 75,000 barrels daily capacity at Rastanura.

At December 31, 1945, total assets equaled $738,346,440.

TEXAS COMPANY[29]

Incorporated in Delaware, August 26, 1926, as the Texas Corporation, and acquired by exchange of shares substantially all outstanding stock of the Texas Company, a Texas corporation which was organized in 1902. In 1927, formed the Texas Company, a Delaware corporation, to acquire all of the property and assets of the Texas Company, a Texas corporation, which was then dissolved. Effective November 1, 1941, the Texas Corporation merged the Texas Company (Delaware) and caused the Texas Company (California) to be dissolved. The Texas Corporation acquired all assets and assumed all liabilities of both these companies, and thereafter became known as the Texas Company.

As of July 1, 1936, the company arranged with the Standard Oil Company of California for the consolidation of certain of their foreign interests. Company had certain wholly owned subsidiaries, The Texas Company (Australasia) Limited, The Texas Company (China) Limited, The Texas Company (India) Limited, The Texas Company (South Africa) Limited, and the Texas Company (Philippine Islands) Incorporated, which owned extensive marketing facilities in China, India, Australasia, the Philippines, Africa, and elsewhere but were without sources of supply closer than America. Standard Oil of California had a wholly owned subsidiary, the Bahrien Petroleum Company, Limited, which had previously developed an oil field and erected a refinery on Bahrien Island in the Persian Gulf, but was without satisfactory retail marketing facilities. Accordingly, Bahrein Petroleum Company, Limited, doubled its outstanding stock and issued the additional stock to the Texas Corporation (now the Texas Company), which in turn transferred to California Texas Oil Company, Limited, a new wholly owned subsidiary of Bahrein, ownership of stock of companies with

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[29] Ibid., p. 2687.

the market facilities previously mentioned.

On December 21, 1936, company made an additional arrangement with Standard Oil Company of California by which it acquired from Far Eastern Petroleum Company, a wholly owned subsidiary of Standard, a half interest in California Arabian Standard Oil Company, now Arabian American Oil Company (which had a concession on approximately 100,000,000 acres in Saudi Arabia, about 40 miles from Bahrein Island, and a 50% interest in N.V. Nederlandsche Pacific Petroleum Maatschappij (which had an exploration concession on approximately 1,482,000 acres in Sumatra and exploration and exploitation concession on approximately 475,000 acres in Java, and a 20% stock interest in N.V. Nederlandsche Nieuw Guinee Petroleum Maatschappij which in turn held an exploration concession on about 24,710,000 acres in Dutch New Guinea). As consideration, company agreed to pay to Far Eastern $3,000,000 cash and $18,000,000 in deferred payments, the latter to be made at specified rates when and as oil was produced from the Arabian and Netherlands New Guinea concessions. At the same time, company gave to Far Eastern, an option until July 1, 1939, to acquire half interest in ten marketing subsidiaries of the corporation operating in European countries and in certain consignment agencies in Africa, with the proviso that the right to exercise the option was contingent upon the development of 72,000,000 barrels of crude oil reserves in the Arabian and Netherlands New Guinea concessions and with the proviso that consideration to be paid was in part the release of the Texas Corporation from its contingent obligation to pay the unpaid balance on the $18,000,000 for an interest in oil producing companies (previously referred to) and the repayment of any such part theretofore paid. This option was not exercised prior to its expiration.

Subsidiaries:

Is an operating and holding company owning as of December 31, 1944, 100% voting control

of the following:

Caldas Petroleum Company, Delaware
California Petroleum Corporation, California, inactive
Cartagena Petroleum Company, Delaware
Compania de Petroleos de Las Amazonas, Colombia
" " " de Caqueta, Colombia
" " " La America, "
" " " La Patricia, "
" " " Las Indias, "
Compania Petrolera De Bogota, Colombia
El Liberatador Compania Petrolera, S.A., Colombia
Funza Petroleum Company, Delaware
Georgia Texas Oil Company, Georgia
Indian Refining Company, Delaware
Indian Refining Company, Maine, inactive, dissolution authorized
Lain Oil and Gas Company, Illinois, inactive, dissolution authorized
Llanos Petroleum Company, Delaware
Marvel Oil Company, Wyoming, oil properties in Wyoming
Putumayo Petroleum Company, Delaware
Quesada Petroleum Company, Delaware
Sabanas Petroleum Company, Delaware
Sierra Pipe Line Company, California, organized in 1944 to operate a 60 mile pipe line from Elk Hills, California, to a junction point at Cottonwood Pass, California on Valley Pipe Line Company's system
N.V. Petroleum Maatschappij, The Texas Company, Holland, marketing
Naamlooze Vennootschap Algemeene Maatschappij tot Wederver koop van Petroleum en Bijproducten, De Lichbron, Holland, inactive
Sociedade Anonyma de Oleo Calena, Signal, Brazil
Socorro Petroleum Company, Delaware
Teguendama Petroleum Company, Delaware
Texaco Development Corporation, Delaware, patents and patent rights
Texaco S.A. (Texaco A.G.), Switzerland, marketing

Texas Eastern Company, Limited, England, inactive
Texas Exploration Company, Limited, England, inactive
Levant Petroleum Company, Limited, England, inactive
Societe Texas Egyptienne des Petroles, Egypt, inactive
Texas Meditterranean Petroleum Company, Limited, England, inactive
Texas Petroleum Company, New Jersey
The Texas Company Aktiebulag, Sweden, marketing
Rederiaktiebolaget Texaco, Sweden, marketing
The Texas Company Aktieselkab, Denmark, marketing
" " " (Carribean) Limited, Delaware
" " " (of Ireland) Limited, Ireland, marketing
" " " (Overseas) Limited, Delaware
" " " (Panama) Incorporated, Panama
" " " (Puerto Rico) Incorporated, Puerto Rico
Cia Italiana Texaco, S.A., Italy, marketing
The Texas Company Societe Anonyme Belge, Belgium, marketing
" " " SAE Spain, Canary Islands
" " " (South America) Limited, West Virginia
" " " (Uraguay) Sociedad Anonima, Uraguay
" " " (West Indies) Limited, Cuba
The Texas Oil Company, Limited, England, marketing
The Texas Pipe Line Company, Texas Pipe lines
Tolima Land Company, Delaware
Yale Petroleum Company, Wyoming

There are also six unnamed wholly owned subsidiaries which operate in foreign countries.

Company owns 85.21% of voting control of Societe des Raffineries de Petrole de la Gironde.

The corporation or a subsidiary also owned as of December 31, 1944, securities consisting of less than majority control but more than 25% of the voting power in the corporations listed below:

American Overseas Petroleum Company (50%), Delaware, organized in 1944 to develop properties in Egypt, Australia, and Netherlands East Indies.*

Colombian Petroleum Company (49.90%), Delaware concessions in Colombia (Socony Vacuum Oil Company, Incorporated, owns 49.9085% of voting power and others own 0.183%)

Caltexo Corporation (49%), Maryland, carbon black and natural gasoline (remaining 51% of voting power owned by Colombian Carbon Company)

Compania Colombiana Del Petroleo Eldorado S.A. (50%), Colombia*

Compania de Petroleo Gren Colombia S.A. (33.33%), Colombia (remaining voting power equally owned by Standard Oil Company of California and Socony Vacuum Oil Company, Incorporated)

Gasoline Products Company, Incorporated (33.33%) Delaware, patents and patent rights (remaining voting power owned equally by Standard Oil Company (Indiana) and the M.W. Kellog Company)

Jefferson Chemical Company, Incorporated (50%), Delaware, research (remaining voting power owned by American Cyanamid Company)

Kaw Pipe Line Company (33.33%), Delaware, Pipe Lines (remaining voting power owned equally by Phillips Petroleum Company and Cities Service Oil Company)

La Junta Petroleum Company (50%), Delaware (remaining 50% of voting power owned by or beneficially held for Socony-Vacuum Oil Company, Incorporated)

Neches Butane Products Company (30%), Delaware (remaining voting power is owned as follows: Gulf Oil Corporation, 30%; Socony-Vacuum Oil Company, Incorporated, 22.857%; Pure Oil Company, 12.5%; and Atlantic Refining Company, 4.643%)

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*Remaining 50% of voting power controlled by Standard Oil Company of California.

N.V. Nederlandsche Pacific Petroleum Maatshappij (50%), Holland, concessions in East Indies*

Process Management Company, Incorporated (50%), Delaware (remaining 50% of voting power owned by Standard Oil Company (Indiana)

Sociedad Anonima Petrolero Manapire (39.25%), Venezuela**

Sociedad Anonima Petrolera Las Mercedes (50%), Venezuela**

South American Gulf Oil Company (50%), Delaware, pipe line in Colombia***

South Mediterranean Oil Fields Limited, England (50%)*

Texas-New Mexico Pipe Line Company (45%), Delaware (remaining voting power is owned as follows: Consolidated Oil Corporation, 35%; Empire Gas and Fuel Company, 10%; Tide Water Associated Oil Company, 10%)

The Bahrein Petroleum Company, Limited (50%), Canada, producing, refining, marketing, in Far East*

The Gray Processes Corporation (50%), Delaware (remaining voting power owned equally by Standard Oil Company (Indiana) and Pure Oil Company)

The Texas-Empire Pipeline Company (50%), Delaware, pipe lines (remaining 50% of voting power owned by Empire Gas and Fuel Company)

Ultramar Petroleum Company (50%), Delaware, refining, marketing in Argentina***

Valley Pipeline Company (50%), California, pipe lines (remaining voting power owned by Seaboard Oil Company of Delaware)

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*Remaining 50% of voting power controlled by Standard Oil Company of California.

**Remaining 50% of voting power owned by Caracas Petroleum, Sociedad Anonima (Venezuela).

***Remaining 50% of voting power owned by or beneficially held for Socony-Vacuum Oil Company, Incorporated.

Mc Cull Frontenac Oil Company, Limited (48.87%),
Canada
Seaboard Oil Company of Delaware (32.31%),
Delaware

On November 13, 1945, it was announced that a new oil refinery company known as Bitumen and Australian Oil Refineries, Limited, had been formed in Australia with a capital of $5,000,000, 40% of which will be subscribed by California Texas Oil Company, Limited. Latter company is jointly owned by company and Standard Oil of California.

In 1946, Caltex Oil (Aden), Limited, was formed as a subsidiary of California Texas Oil Company, Limited, to market Bahrein Petroleum Company, Limited, products in the Aden area. Bahrein petroleum is owned jointly by company and Standard Oil of California.

Business and Products:

Corporation and subsidiaries constitute an integrated organization engaged in all phases of the oil industry in the United States and marketing operations abroad, in addition to which company has substantial investments in companies engaged in all phases of the oil industry in various foreign countries. The business covers the acquisition, exploration and exploitation of oil and gas lands; the purchase, sale and transportation of crude oil; manufacture of natural gasoline; the refining of crude oil and marketing of refined products.

Company and its subsidiaries also engage in the acquisition, development and licensing of patent rights (which relate principally to the petroleum industry) in the United States and foreign countries.

Producing and prospective acreage in United States held as of December 31, 1945, was Fee and Mineral Fee, 746,381 acres; Leased 9,310,404 acres; Total, 10,056,785 acres.

Company's interest in producing and prospective acreage held in South America including net interest in acreage held by non-subsidiary companies owned 50% or less at December 31, 1945, was as follows: Fee lands, leases, and concession contracts, 3,915,462 acres; concessions applied for and concessions accepted but not in contract form, 8,025,509 acres; Total, 11,940,971 acres.

For the year 1945, gross oil production equaled 100,957,670 barrels.

Company also has sulfur interest in Texas.

At December 31, 1945, total assets equaled $833,532,968.

TEXAS PACIFIC COAL AND OIL COMPANY[30]

Incorporated in Texas October 4, 1888 as Texas and Pacific Coal Company. Name of Texas Pacific Coal and Oil Company adopted April 17, 1918.

In 1933, company determined to confine activities to the oil and gas industries and as a result took steps to discontinue operations of the following companies, liquidation of whose assets was commenced: Texas Pacific Mercantile and Manufacturing Company, Thurber Brick Company, and Thurber Construction Company. Also took steps to discontinue operations of Thurber Tank Line Company.

During 1934, disposed of its interest in Comet Oil Company, a marketing subsidiary.

On January 1, 1939, Texas Pacific Coal and Oil Company of Delaware, a subsidiary, was liquidated and its assets were taken over by the company.

Company and subsidiary (Thurber Pipe Line Company, Texas, 100%) are engaged in the acquisition, exploration, and development of oil and gas lands; in the production of crude oil and natural gas; in the recovery of natural gasoline; in the transportation of crude oil by pipe line; in the refining of crude and in the compounding of oils and greases.

As of December 31, 1945, company owned in fee, 31,890 acres of real estate and held 454,668 net acres of oil and gas leases (1944, 442,053 net acres). Of acreage owned, company acquired oil and gas leases in 1945 totaling 64,500 acres (51,000 in Texas and New Mexico, balance in Mississippi, Louisiana, and Alabama).

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[30] Ibid., pp. 872-873.

As of December 31, 1945, had 926 oil and gas wells on individually and jointly owned leases.

As of December 31, 1945, total assets equaled $16,466,007.

TIDE WATER ASSOCIATED OIL COMPANY[31]

Incorporated in Delaware, March 5, 1926. Shortly thereafter, through an exchange of stock, acquired control of Associated Oil Company on the basis of one third share of six dollars preferred and one share of common for each share of Associated Oil Company; control of Tide Water Oil Company on the basis of one and one third shares of common for each share of Tide Water Oil Company common; all outstanding stock of San Francisco and McKittrick Oil Company on the basis of $25.025 per share for its capital stock, payable 20% in cash, 40% in six dollar preferred taken at $97.50 per share, and 40% in common taken $30.00 per share; all outstanding stock of Tide Water Associated Oil Company of California on the basis of ten dollars per share for its capital stock payable on common taken at a value of $24.625 per share.

In 1936, company and its subsidiary, Associated Oil Company, sold to the South Penn Oil Company 176,471 shares of company common at $17.00 per share. Purchased 172,743 shares of capital stock of the South Penn Oil Company at $35.00 per share. South Penn Oil Company is one of the leading factors in the Pennsylvania oil fields and sells considerable crude to company.

In 1937, purchased a 10% interest in Texas-New Mexico Pipe Line Company, which owned pipe lines in New Mexico and Texas, for a consideration of $1,200,000.

Subsidiaries:

Associated Oil Company of Arizona, Arizona, inactive
The Associated Service Stations, Arizona, inactive
Associated Oil Company, California, inactive

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[31] Ibid., p. 2595.

Tide Water Associated Oil Company of California, California, inactive
Pennsylvania Oil Marketers, Incorporated, Delaware, inactive
East Jersey Railroad and Terminal Company, New Jersey, railroad facilities
Tidal Pipe Line Company, Oklahoma, crude pipe lines in Texas
Seaside Oil Company, California, owns and operates a skimming and asphalt plant at Ventura, California
Tide Water Oil Company of Canada, Limited, Canada, marketing in Canada
The Tidemex Company, S.A., Mexico, inactive
The Clarendon Petroleum Company, Limited, England, markets lubricants
Associated Oil Company of Utah, Utah, inactive
The Tide Water Pipe Company, Limited (99.99%), Pennsylvania, operates a trunk pipe line between Rixford, Pennsylvania and Bayonne, New Jersey

Company and subsidiaries engage in all important branches of the oil industry. Activities include the acquisition and development of oil and gas lands; the production, purchase, and sale of crude oil, natural gas, and natural gasoline; the transportation of crude oil and refined products by pipe line, tankship, tank car, and automobile; the refining of crude oil into such products as gasoline, kerosene, fuel oil, lubricating oil, and greases; the distribution of refined products at wholesale and retail throughout much of the United States, in Hawaii, and certain foreign countries.

At December 31, 1945, company owned or had under lease undeveloped acreage in California, New Mexico, Texas, Oklahoma, Arkansas, Louisiana, Kansas, Illinois, Indiana, Mississippi, Georgia, Alabama, Florida, Colorado, Utah, and Wyoming, as follows: West Coast, 121,158 acres; other, 1,868,822 acres; total, 1,989,980 acres. Also producing properties in Pennsylvania, Illinois,

Indiana, Kansas, Arkansas, Oklahoma, Texas, Louisiana, Mississippi, New Mexico, and California, as follows: West Coast, 24,744 acres; other, 96,950 acres; total, 121,694 acres.

As of December 31, 1945, total assets equaled $258,051,000.

UNION OIL COMPANY OF CALIFORNIA[32]

Incorporated in California, October 17, 1890, and issued stock in exchange for its properties of Hardison and Stewart Oil Company, Sespe Oil Company, and Torrey Canon Oil Company, all of which were subsequently dissolved.

In December 1932, merger with the Union Oil Associates, a California corporation incorporated March 28, 1922, which was purely a holding company for 2,498,051 shares (about 57%) of capital stock in the Union Oil Company of California. Union Oil Associates had one share of its own stock outstanding for each share of company stock owned. Under the plan of the merger, the outstanding stock of Union Oil Associates became the outstanding stock of Union Oil Company of California, and the assets of Union Oil Associates, consisting of the aforesaid stock of Union Oil Company of California, were transferred to the company and became authorized but unissued shares of company stock.

In December 1944, company purchased from American Power and Light Company, the oil producing properties, gasoline absorption plant, and refinery at Cutbank, Montana, formerly owned by Glacier Production Company for $9,900,000 cash, plus or minus certain adjustments.

Subsidiaries:

Is primarily an operating company but as of December 31, 1945, owned 100% voting control in the following:

Union Oil Company of Canada, Limited, Canada, oil general (on September 1, 1945, physical assets and inventories were sold to the British-American Oil Company, Limited, for about $5,500,000. None of the stock of Union Oil was included in the deal.

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[32] Ibid., p. 2054.

Santa Mana Steamship Company, Limited, England, shipping, inactive
Union Oil Company of Mexico, S.A., inactive
Union Oil Company of Nevada, Nevada, inactive
Orcutt Town Water Company, California, water distribution

Other investments: Owned entire ($1,677,400) outstanding 6% class "A" preferred of Outer Harbor Dock and Wharf Company, a California corporation owning all the stock of Outer Harbor Terminal Railway Company. Such stock, on which dividends are in arrears, constitutes less than a majority of the voting stock but representatives of the company constitute a majority of the Boards of Directors of the dock and wharf company and its subsidiary.

Owned less than a majority of outstanding common stock of Pacific Airmotive Corporation, but holdings are included in a voting trust which controls about 51% of total outstanding stock. Two of the three voting trustees are officers of Union Oil. Company's investment in this company is $638,409 and is carried at cost.

Company is engaged in substantially all branches of the oil business, including the acquisition and development of oil lands; the production, purchase, sale, and transportation of crude oil and natural gasoline; the production, treatment, and sale of natural gas; the production of crude oil and the transportation and marketing at wholesale and retail of petroleum products. Its development and production activities are conducted chiefly in California, Louisiana, Montana, Texas, and Wyoming. To a small extent, operations are carried on through subsidiaries.

In 1937, Union's shipments to Japan represented 17% of total domestic and export sales volume, and 11% of the corresponding dollar sales.

As of December 31, 1944, company and subsidiaries had the following gross acreage (held in fee, under mineral rights, or under leasehold)

of oil rights:

	In United States	In New Mexico
Proved	29,385 acres	160 acres
Unproved	649,176 acres	14,997 acres

Company's estimate of proved crude oil reserves in developed and undeveloped lands totaled 383,100,000 barrels at December 31, 1945 excluding royalty and co-owned interests of 93,000,000 barrels of natural gas and natural gasoline which may be recovered with the crude. Preponderant amount in Texas.

As of December 31, 1945, total assets equaled $228,518,998.

UNITED STATES POTASH COMPANY[33]

Incorporated December 18, 1926 under laws of New Mexico. Present title adopted December 31, 1929.

Company is engaged in mining and refining potash salts and selling and distribution of various grades of salts.

Company's mine and refinery are located in the vicinity of Carlsbad, New Mexico. Mine is equipped to produce over 4,000 tons of ore per day. Refinery has capacity of 1,000 tons of muriate potash per day.

Potash mine is on lands owned by United States Government and State of New Mexico and is leased on rental and royalty basis. Such leases cover an aggregate of approximately 46,995 acres of which 15,323 acres are owned by United States Government and 31,672 acres by State of New Mexico. Company also owns 160 acres of land containing undeveloped ore.

Ore reserves are estimated between 12 and 16 million tons of potash salts of which between 85% and 95% is considered recoverable. Company owns in fee in same territory, about 9,500 acres which are unimproved and non-income producing.

Yearly production in tons ended December 31, except 1945 (latter to August):

	Ore Mined	Muriate of Potash Produced
1945	655,374	211,131
1944	1,156,820	340,559
1943	1,161,599	326,408
1942	1,013,109	287,326
1941	867,201	261,255
1940	636,836	215,553
1939	524,426	168,685

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33 Ibid., p. 1179.

Net Sales 1945.....$8,039,063
Total Income.....1,858,198
Net Income.....1,644,880

Total Current Assets.....3,476,071
Land.....243,377
Plant and Equipment.....7,483,365
Leaseholds.....763,814
Depletion and amortization....508,118

Total Assets.....7,627,406
Net Current Assets.....2,488,532

Sinking fund annually on or before November 15, beginning in 1945, not less than $175,000 and not more than $350,000 to purchase preferred at not more than $100 per share, plus accrued dividends. Preferred so acquired to be cancelled.

Of outstanding common stock (325,000 shares), 162,480 (30.95%) are controlled by Pacific Coast Borax Company, Nevada.

MILLS IN NEW MEXICO

COMPANY NAME	LOCATION	TYPE & MATERIAL HANDLED	APPROXIMATE DAILY CAPACITY
J.S. Smelting, Refin-ng & Mining Co.	Grant County	Copper-lead-zinc mill	450 tons
'helps Dodge Corp.	Grant County	Copper precipita-tion plant	?
Kennecott Copper Corp.	" "	Copper-molybdenum precipitation plant and smelter	25,000 tons
'inos Altos Mining Co.	" "	Copper-lead-zinc mill (not operating)	?
merican Smelting & efining Co.	" "	Copper-lead-zinc mill	400 tons
mpire Zinc Co.	" "	Copper-lead-zinc mill	300 tons
eru Mining Co.	Luna County	Copper-lead-zinc mill	1,000 tons
eneral Chemical Co.	" "	Fluorspar mill	200 tons
anner Mining Co.	Hidalgo County	Copper mill	150 tons
onald A. McGhee & Co.	" "	Copper mill	50 tons
oline Mining & illing Co.	Santa Fe "	Lead-zinc mill	50 tons
erraro Mill	" " "	Gold mill	10 tons
lanchard-Hanson Mill	Sierra "	Lead and Fluorspar mill	50 tons
nited Mining & illing Corp.	Socorro "	Manganese mill (not operating)	200 tons

American Smelting & Refining Co.	Socorro County	Copper-lead-zinc	200 tons
Molybdenum Corp. of America	Taos County	Molybdenum mill	200 tons
U.S. Potash Co.	Eddy County	Potash mill & refinery	4,500 tons
Potash Co. of America	" "	"	"
International Minerals & Chemical Corp.	" "	"	"
Southwestern Mining & Milling Co.	Rio Arriba County	Mica mill (not operating)	50 tons
William Heim Mill	Bernalillo County	Fluorspar mill (not operating)	"
Cochiti Mining Co.	Sandoval County	Gold-sliver mill (not operating)	"
Pumice Corporation of America	Valencia County	Pumice mill	100 tons
Zuni Milling Co.	" "	Fluorspar mill	200 tons

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I know of two washing plants at coal mines. There may be others.

St. Louis Rocky Mountain Pacific Company -- Colfax County

Phelps Dodge Corporation ---------- Colfax County

17 November 1948

Securities Exchange Commission
Washington, D.C.

Gentlemen:

I am writing my master's thesis on the control and exploitation of mineral resources in New Mexico. This study is an attempt to find the areas of control over the mineral resources of the state. It seeks to determine in what degree they lie in the hands of private corporations and the federal and state governments.

An essential ingredient in this study is a determination of the status of the exploiters, i.e., the private mining companies. I am informed that the five principal mineral exploiters in the United States are Anaconda Copper, Kennecott Copper, St. Joseph Lead, New Jersey Zinc, and American Smelting and Refining. Only two of these are operating directly in New Mexico presently: Kennecott and American Smelting and Refining. The others may have holdings or subsidiaries in the area. Since that is not a matter of public record in this state, I am turning to you for the information.

As for the five specifically, I would like, if you can provide it, some indication of the influence of these corporations on the mineral market.

I would also appreciate information showing the extent of holdings of these companies in New Mexico, as well as their investments and capital assets here. If you could supply similar information for the companies on the attached list, that would be greatly appreciated as well.

An indication of the major oil companies operating in the state and information like the immediate above would also prove very useful.

The information requested here is predicated on a yet scant acquaintance with the problem

and personalities involved in it. Should you have available for release additional information which you deem useful or necessary to the study, its enclosure with that requested above would be most gratefully received.

The target date for assimilation of all information on this problem is January 15, 1949. Our Division of Research is scheduled to publish a bulletin dealing with the situation, for which this paper will provide the major portion of background and information. The material requested here is groundwork for further study to be completed before January 1.

Very truly yours,

William J. Cunningham
Graduate Assistant

WJC/isb
Enc.

ENCLOSURE

U.S. Smelting, Refining & Mining Company

Phelps Dodge Corporation

Pinos Altos Mining Company

Empire Zinc Company

Peru Mining Company

General Chemical Company

Banner Mining Company

Donald A. McGhee & Company

Moline Mining & Milling Company

United Mining & Milling Corporation

Molybdenum Corporation of America

U.S. Potash Company

Potash Company of America

International Minerals & Chemical Corporation

Southwestern Mining & Milling Company

Cochiti Mining Company

Pumice Corporation of America

St. Louis Rocky Mountain Pacific Company

COPY

Securities and Exchange Commission
Washington 25, D.C.
425 Second Street, N.W.
Corporation Finance Division

December 8, 1948

Mr. William J. Cunningham
The University of New Mexico
Albuquerque, New Mexico

Dear Sir:

In response to your letter of November 17, 1948, in which you request information concerning the investments and properties in the State of New Mexico of certain mining companies, I am enclosing information from our public files which appears pertinent to your inquiry. This information has been submitted by the various corporations in connection with registration statements flied pursuant to the Securities Act of 1933 and applications for registration of securities on exchanges and annual reports filed pursuant to the Securities Exchange Act of 1934. While we have no basis for assuming the information taken from the filed material is other than accurate nevertheless we cannot guarantee its accuracy.

Our rules do not require that corporations filing under the above Acts furnish a break-down of their Property or Fixed Asset accounts into geographical locations and for that reason I am unable in many instances to give you the exact information you requested.

The following companies on the list you have furnished have not filed any statements with us in connection with the Acts which we administer and accordingly I am unable to give you any information concerning them from our files:

Banner Mining Company

COPY

Cochiti Mining Company
Empire Zinc Company
Donald A. McGhee & Company
Moline Mining & Milling Co.
New Jersey Zinc Co.
Pumice Corp. of America
Southwestern Mining & Milling Corp.
United Mining & Milling Corp.

In the second paragraph of your letter, you identify five companies as being the "principal mineral exploiters in the United States" and you state in connection with such companies that you would like to have .."some indication of the influence of these corporations on the mineral market." I cannot be of assistance in this matter since we have made no studies to determine such influence and our files do not provide the information.

Your inquiry concerning the oil industry is so broad that it would involve a review of all our files relating to petroleum companies. In view of the insufficiency of our staff, this cannot be undertaken. However, if you wish to furnish the names of particular oil companies of interest to you, I shall be pleased to cooperate further. I do wish to call you attention to the National Oil Scouts & Landsmen's Association Year Book for 1948 which may be of interest to you. Their office in New Mexico is located in Hobbs, c/o New Mexico Oil Scouts Association. In the event you are not able to acquire a copy of this book I am enclosing a summary taken from it showing the "Undeveloped Acreage Under Lease by Major Companies" which may be of help.

It is regreted that fuller information is not available to assist you in the preparation of your thesis. I assume you have considered other sources of information, such as the New Mexico Bureau of Mines and Mineral Sources. It may be that the voluminous material gathered by the United States Bureau of Mines and the United States Geological Survey would be of value to you. Brief resumes of pertinent facts concerning the various domestic mining companies are included in mining handbooks such as "The Mines Register." I presume copies of this publication are available

in the University of New Mexico Library.

Attached hereto, under the name of each company in question, I am giving a resume of facts believed pertinent to your inquiry. If I can be of further assistance to you please do not hesitate to call upon me.

Very truly yours,

BALDWIN B. BANE

Baldwin B. Bane, Director
Division of Corporation
Finance

COPY

Mining Companies Which Have Filed Information With The Securities and Exchange Commission

Pinos Altos Mining Company, Inc.

Leases certain lode mining claims near White Signal, Grant County, New Mexico and certain unpatented lode mining claims in the Pinos Altos Mining District, Grant County, New Mexico. Purchased a certain tract of land situated in Grant County, New Mexico, known as the Continental Millsite, together with a milling plant and equipment.

At September 1947 Mill was operating and producing gold and copper minerals.

This information was furnished in connection with the company's proposed offering of securities under a regulation providing an exemption from registration under the terms and conditions of the regulation.

St. Louis, Rocky Mountain and Pacific Company

Company owns bituminous coal mines located in the Raton Field, Colfax County, New Mexico. The consolidated balance sheet as at December 31, 1947 showed Properties, Plant and Equipment carried at $6,379,844, the Reserves for Depreciation and Depletion amounted to $1,684,605, leaving Net Properties, Plant and Equipment of $4,695,239.

International Minerals & Chemicals Corporation

Company acquired, through merger with the Union Potash & Chemical Company on April 6, 1942, leases on 7,674 acres of land containing potash deposits near Carlsbad, New Mexico. The United States Department of Interior is the owner of these acres. The leases run for twenty years from 1938 and carry royalties amounting to approximately 5 1/3% of the gross value at the point of shipment of ores and minerals mined. Company also holds a lease from the State of New Mexico covering 920

acres and has made application to the Department of Interior for leases covering approximately 7,680 additional acres. The refinery located on company owned property had a capacity as of March 1946 of in excess of 1,200 tons of potash products. As of June 30, 1941, Union had $3,585,083 invested in Buildings, Machinery, Equipment, Development, Permits and Leases. On the same date Reserves for Depreciation and Amortization amounted to $96,065. No later figures are available for the New Mexico properties as a group.

United States Potash Company

Company is engaged in the mining and refining of potassium salts. Mines and refinery are located in the vicinity of Carlsbad, New Mexico. Mines are located on lands leased from the Federal Government and the State of New Mexico. Leases cover approximately 46,995 acres of which 15,323 are owned by the Federal Government and 31,672 acres by the State of New Mexico.

As at December 31, 1947, Fixed Assets, including land, water and mineral rights, plant, equipment and leaseholds, were carried at $9,398,969. Reserves for Depreciation, Depletion and Amortization amounted to $5,569,464 leaving Net Fixed Assets of $3,829,505.

Molybdenum Corporation of America

Company owns a molybdenum mine located at Questa, New Mexico with estimated reserves at of April 30, 1935 of 11,767,052 pounds of molybdenum sulphide. Mineral lands in New Mexico were carried as at December 31, 1947 at $1,224,341. After deduction of Reserve for Depletion of $924,590, Net Mineral Lands in that State amounted to $299,751. Buildings, Machinery, Equipment and Water Rights were carried at $288,709 before deduction of the reserve for depreciation. Such reserve is not broken down among individual properties.

Potash Company of America

Company is engaged in the mining and refining of potassium salts. Mines and refinery are located in the vicinity of Carlsbad, New Mexico on lands leased from the Federal Government, the State of New Mexico and private individuals. Federal Government leases total 15,360 acres. State of New Mexico leases total 9,640 acres and private leases total 9,639 acres.

As at June 30, 1948, Leaseholds were carried at $18,237,506 and Reserve for Depletion was $793,998 or Net Leaseholds of $17,443,508. Property, Plant and Equipment was carried at $6,285,366 and Reserve for Depreciation amounted to $3,202,783 or Net Property of $3,082,583. Total Net Fixed Assets thus amounted to $20,526,091.

General Chemical Company

Company was a wholly-owned subsidiary of Allied Chemical & Dye Corporation. On November 1, 1947 the General Chemical Company was merged into the Allied Chemical & Dye Corporation. Our records do not disclose any break-down of the Property, Plant and Equipment account. In addition Allied Chemical and Dye Corporation does not list any plants, mines or other fixed assets as being located in the State of New Mexico.

Peru Mining Company

Company is a wholly-owned subsidiary of Illinois Zinc Company. Peru Mining Company owns nine properties near Hanover, New Mexico and engages in the mining and concentrating of zinc ores. Total land owned includes 1,603 acres leased from the United States Government. The concentrating mill is located near Deming, New Mexico. This information was furnished in 1935 in connection with the company's application for the listing of its securities on an exchange at that time. As at September 30, 1947 property, plant and equipment of the Peru Mining Company and a wholly owned mining subsidiary operating in New Mexico was carried at $436,696. Reserves for depletion,

amortization and depreciation amounted to $72,657. Net property was therefore $364,039.

American Smelting and Refining Company

A registration statement filed under the Securities Act of 1933 and effective February 14, 1937 lists eight undivided 51% interests in a group of mines called Asarco Mines, located in the Central Mining District Grant County, New Mexico. Such interests varied from tenant in common to option to purchase. The options as listed expired variously from July 1, 1938 to June 1951. No information is given as to the principal minerals mined or the status of ore reserves. No information is given as to the dollar investment in the above properties. Although this company files reports annually with the Commission these properties are apparently not considered material to the enterprise as a whole and current information on them is not given in the reports.

Phelps Dodge Corporation

The company lists among its principal mines the Buno Mountain Branch Copper Mines at Tyrone, New Mexico and the Stag Canon Branch Coal Mines at Dawson, New Mexico. In addition the company operated a mercantile company at Dawson. This information was furnished in 1935 in connection with the company's application for the listing of its securities on an exchange at that time. Reports filed subsequently do not indicate any material changes in the information. Our records do not disclose the dollar investment in the above properties.

Kennecott Copper Corporation

The company lists among its principal mines the porphyry mines with extensive copper ore reserves located at Santa Rita, New Mexico. Among its principal plants is the copper ore concentration plant located at Hurley, New Mexico. The Gallup American Coal Company, 66 2/3% owned by Kennecott Copper Corporation, operated a soft coal mine, with limited production at Gallup, New Mexico. In 1945

the latter company was liquidated and dissolved. This information was furnished in 1935 in connection with the company's application for the listing of its securities on an exchange at that time. Reports filed subsequently do not indicate any material changes in the information. Our records do not disclose the dollar investment in the above properties.

St. Joseph Lead Company

United States Smelting Refining and Mining Company

Anaconda Copper Mining Company

Our records do not disclose whether the above companies had any investments or properties in the State of New Mexico.

Undeveloped Acreage in New Mexico Under Lease by Major Companies

Companies	Acreage
Amerada Petroleum Corp.	77,201
American Republics Corp.	27,474
Atlantic Refining Co.	52,550
Byrd-Frost	111,072
Cities Service Co.	76,618
Continental Oil Co.	152,729
Gulf Oil Corp.	339,647
Humble Oil and Refining Co.	127,895
Kerr-McGee	14,200
Magnolia Petroleum Co.	189,837
Malco	152,790
Mid-Continent Petroleum Co.	58,637
Ohio Oil Co.	62,466
Phillips Petroleum Co.	91,263
Pure Oil Co.	50,898
Richfield Oil Corp.	208,260
Shell Union Oil Corp.	39,459
Sinclair Prairie Oil Co.	113,795
Skelly Oil Co.	108,413
Standard Oil Co. of Texas	47,014
Stanolind Oil & Gas Co.	63,976
Texas Co.	127,226
Texas Pacific Coal & Oil Co.	57,331
Tide Water Associated Oil Co.	31,288
Union Oil Co. of California	9,961
Western Natural Gas Co.	22,433
Total	2,505,250

The above information was obtained from Page 396 of the 1948 Year Book of the National Oil Scouts & Landsmen's Association.

January 7, 1949
818 La Vega Court
Albuquerque, N.M.

Mr. Glenn Staley, Secretary
Lea County Operators Committee
Hobbs, New Mexico

Dear Mr. Staley:

I am conducting a study of the control and exploitation of mineral resources in New Mexico for my Master's dissertation. During a recent field research trip throughout the state I visited your offices in Hobbs, but was unable to see you since you were out of town at the time. I did speak to Mr. Vaughan, your chief clerk I believe, and he provided me with a great deal of useful information. However, since that time, further research in the problem has given rise to some questions and it is in this regard that I write.

I am interested in learning a little more fully the history of voluntary regulation of oil, as expressed by the establishment of the Lea County Operators Committee. Specifically, I would like to determine what were the principal factors which contributed to the birth of this organization. I have noted that the rise of a similar system in Texas was affected in part by flush pool development and I wonder if a similar situation existed in New Mexico. Secondly, I would like some indications of the success of the voluntary plan during its life, its adequacy and effectiveness. Finally, I am interested in the major factors which led to the substitution of state for voluntary regulation. Any reference material toward which you can direct me or information which you may provide will be greatly appreciated.

Also, I understand that you played a great part in the development of oil and gas regulation in New Mexico and I would like to learn more about this. And one final question. What

is the membership of the Lea County Operators Committee and what percentage of the total number of operators in the state is this?

Yours truly,

William J. Cunningham

COPY

Lea County Operators Committee
Drawer 1
Hobbs, New Mexico

January 31, 1949

Dr. Wm. J. Cunnungham
Department of Government & Citizenship
University of New Mexico
Albuquerque, New Mexico

Dear Dr. Cunningham:

Please pardon the delay in asnwering your letter of January 7.

The principle factors that contributed to the birth of the Hobbs Pool proration committee, the forerunner of what is now the Lea County Operators Committee, were as follows: Immediately following the discovery of the Hobbs Oil Pool by the Stanolind Oil and Gas Company and the Humble Oil and Refining Company; and the inability of the pipe lines, serving the area, to handle the volume of flush crude, resulted in a voluntary agreement entered into by all of the operators in the pool to distribute equitably among all operators this limited market. All operators in the Hobbs pool were members of the Hobbs Pool Proration Committee. This voluntary agreement had the endorsement of the State Geologist and the State Land Commissioner for the State of New Mexico. This voluntary agreement continued to operate until the passage of the present Oil Conservation Commission law in 1935, such law creating the present Oil Conservation Commission of the State of New Mexico. In 1936 the Hobbs Pool Proration Committee was changed to include all operators in Lea County. At the present time all operators in Lea County are members of this Committee. The functions of which are as follows:

COPY

Lea County Operators Committee
Drawer 1
Hobbs, New Mexico

January 31, 1940

Dr. Wm. J. Cunningham
Department of Government & Citizenship
University of New Mexico
Albuquerque, New Mexico

Dear Dr. Cunningham:

Please pardon the delay in answering your letter of January 7.

The principle factors that contributed to the birth of the Hobbs Pool proration committee, the forerunner of what is now the Lea County Operators Committee, were as follows: Immediately following the discovery of the Hobbs Oil Pool by the Stanolind Oil and Gas Company and the Humble Oil and Refining Company; and the inability of the pipe lines, serving the area, to handle the volume of flush crude, resulted in a voluntary agreement entered into by all of the operators in the pool to distribute equitably among all operators this limited market. All operators in the Hobbs pool were members of the Hobbs Pool Proration Committee. This voluntary agreement had the endorsement of the State Geologist and the State Land Commissioner for the State of New Mexico. This voluntary Agreement continued to operate until the passage of the present Oil Conservation Commission law in 1935, such law creating the present Oil Conservation Commission of the State of New Mexico. In 1938 the Hobbs Pool Proration Committee was changed to include all operators in Lea County. At the present time all operators in Lea County are members of this Committee. The functions of which are as follows:

1. A monthly meeting of Company engineers and operators to discuss operating and engineering problems in all pools in the county.

2. The compilation of engineering and production data covering all oil, gas and water produced by each individual 40 acre unit in Lea County.

3. The issuance of a monthly engineering report covering all pertinent data pertaining to production.

4. The maintainence of a bottom hole pressure unit, and the running of bottom hole pressure surveys in all Lea County Pools.

5. Assisting the Oil Conservation Commission in the mechanics of publishing and distributing the monthly proration schedule.

6. Publishing of an annual report covering all statistical data, also the publishing of an annual report covering all engineering data.

The present members of the Lea County Operators Committee represent 99.4% of all operators (a few small operators with one or two wells do not take any part or contribute).

The substitution of the Oil Conservation Commission for the Lea County Operators voluntary program was necessary in order that New Mexico become a member of the Interstate Oil Compact Commission; as it is impossible for an oil producing State to be a member of the Interstate Oil Compact Commission unless the State had adopted an Oil Conservation law.

If we can be of any further help to you please advise.

Yours very truly,

GLENN STALEY

Glenn Staley

CGS:GI

January 5, 1949
818 La Vega Court
Albuquerque, N.M.

International Minerals
and Chemicals Corporation
Chicago, Illinois

Gentlemen:

I am conducting a study of "The Control and Exploitation of Mineral Resources in New Mexico" for my graduate thesis. In the course of my research, a pamphlet entitled "The Potash Industry and Federal Taxes" has come to my attention. This pamphlet was signed by Mr. J. P. Magerson, Vice President of your firm, and submitted in October of 1943.

I have found this discussion to be highly informative and useful in my study, but it is over five years old now. Therefore I would appreciate some indication of the present status of this question of percentage depletion as it affects the potash industry at the present time.

Yours truly,

William J. Cunningham

COPY

International Minerals and
Chemical Corporation,
20 North Wacker Drive
Chicago 6, Ill.

January 24, 1949

Mr. William J. Cunningham
Graduate Assistant
Department of Government and
Citizenship
The University of New Mexico
Albuquerque, New Mexico

Dear Mr. Cunningham:

The question set forth on the last paragraph of your letter of January 5th is rather general in nature. If you will please be more specific I will perhaps be able to assist you.

All I can say at this time in answer to your letter is that percentage depletion is allowable to potash miners for federal income tax purposes at the rate of 15% of gross income from the property, not to exceed 50% of net income from the property.

Very truly yours,

C. M. EDWARDS

Manager Tax Department

CME:M

January 5, 1949
818 La Vega Court
Albuquerque, N.M.

Mr. George Harley
International Minerals and
Chemicals
Carlsbad, New Mexico

Dear Mr. Harley:

In the course of a recent field research trip for my thesis, "The Control and Exploitation of Mineral Resources in New Mexico," I visited your plant in Carlsbad and met you briefly at that time. Circumstances prevented our discussion of some of the aspects of this problem on which I felt you could help me.

However, I do wish to express my approciation to you for the thoughtfulness and cooperativeness of the members of your firm to whom I spoke during the course of my visit. Everyone was very interested in helping me as much as possible. I arrived there with a rather hazy idea of the relationship of the federal government and state government to the potash industry. I felt with a very clear view of the forces at work and the problems involved. Your people were the most helpful of any I spoke to in the course of my research. The matters I wished to ask you about concerned the New Mexico Miners and Prospectors Association of which, I understand, you are the current president. Briefly, I am seeking a survey of the history of the Association, the factors that contributed to its birth and, particularly, its rapid growth around 1940. Also, I would appreciate some indication of the activities of this group--what might be called the principal justification for its existence. This information would be of very great value to me and if you could provide it, I would be sincerely appreciative.

Sincerely,

William J. Cunningham

COPY

New Mexico Miners and
Prospectors Association
Room 10, Barnett Building
P.O. Box 503
Albuquerque, New Mexico

January 13, 1949

Mr. William J. Cunningham
Graduate Assistant
Dept. of Government & Citizenship
The University of New Mexico
Albuquerque, New Mexico

Dear Mr. Cunningham:

Mr. Harley has referred your letter of January 5th to me and I enclose some material that should sum up briefly the history of the organization, the principles upon which we were founded and operate, and indications of our present activities.

You mentioned the rapid growth around 1940 and I must confess that that growth which was soon after the organization was founded was quite temporary. That growth stemmed from a lot of initial activity in the Grant County area in a few very nice meetings and parties but was soon followed by a bad split in the membership due to some labor-management arguments at the operations in that area and the consequent dropping out of all the labor element in the Association. The organization suffered considerably during the war years but managed to hold together and retain about 300 active members. Since September 1946 the membership has grown to a little over 1000 and our activities and functions have increased on all fronts.

I trust this is more or less along the lines that you desire and I will be glad to furnish additional information at your request.

Yours very truly,

JACK PIERCE

Jack Pierce,
Secretary-Treasurer.

jp/fh
Enclosures

COPY

THE NEW MEXICO MINERS & PROSPECTORS ASSOCIATION was founded on January 28, 1939, under the banner of the following basic aim: "To promote the general welfare of the mining industry in New Mexico." At that time a PREMISE was adopted which is quoted here, altered only by the addition of the last two means of attaining the desired ends:

PREMISE of the New Mexico Miners and Prospectors Association is: We believe that the welfare of the people of this state and of the United States begins with the production and sale of the products of nature.

From the great natural resources of our country the mining industry produces metals, precious, rare, base, and non-metallics including coal; the agricultural industry produces food stuffs, meats, raw materials of great use to man; lumbering industry produces materials; and the oil industry produces endless products to the benefit of mankind. We recognize the importance of these basic industries and the dependability of each one upon the other. The products of these industries from year to year is new wealth that, by manufacture, transportation, and commerce is the source of supply of wealth on which our nation depends.

Further, we recognize that in guarding against excessive taxation of the industry of mining, we are protecting resources of wealth that have already been found and many to be found that are enormous in size. These resources represent a vast amount of good to mankind. They must not be wasted. They must be properly developed and the industries through which they are turned into wealth must not be destroyed. Therefore, it is proposed that we promote the general welfare of the mining industry by:

1. Forming an association which will afford a common meeting ground for the prospector, miner, merchant, professional man, banker, and business man, and acquainting these various groups of citizens with conditions which foster the

mining industry as well as hamper it.

2. The establishment of publicity, or a Public Relations campaign which will, through the press and by public meetings, result in the people of the state becoming mining-minded.

3. The examination of all federal and state legislation, past and proposed, that has to do with the mining industry.

4. Maintaining careful watch over arbitrary rulings of federal as well as state bureaus.

5. Advocating a natural storehouse of metals and minerals for times of emergency.

6. The construction of secondary road systems that will benefit the mining industry.

7. Development of a power program for the use of the power that is generated by water flowing through our state.

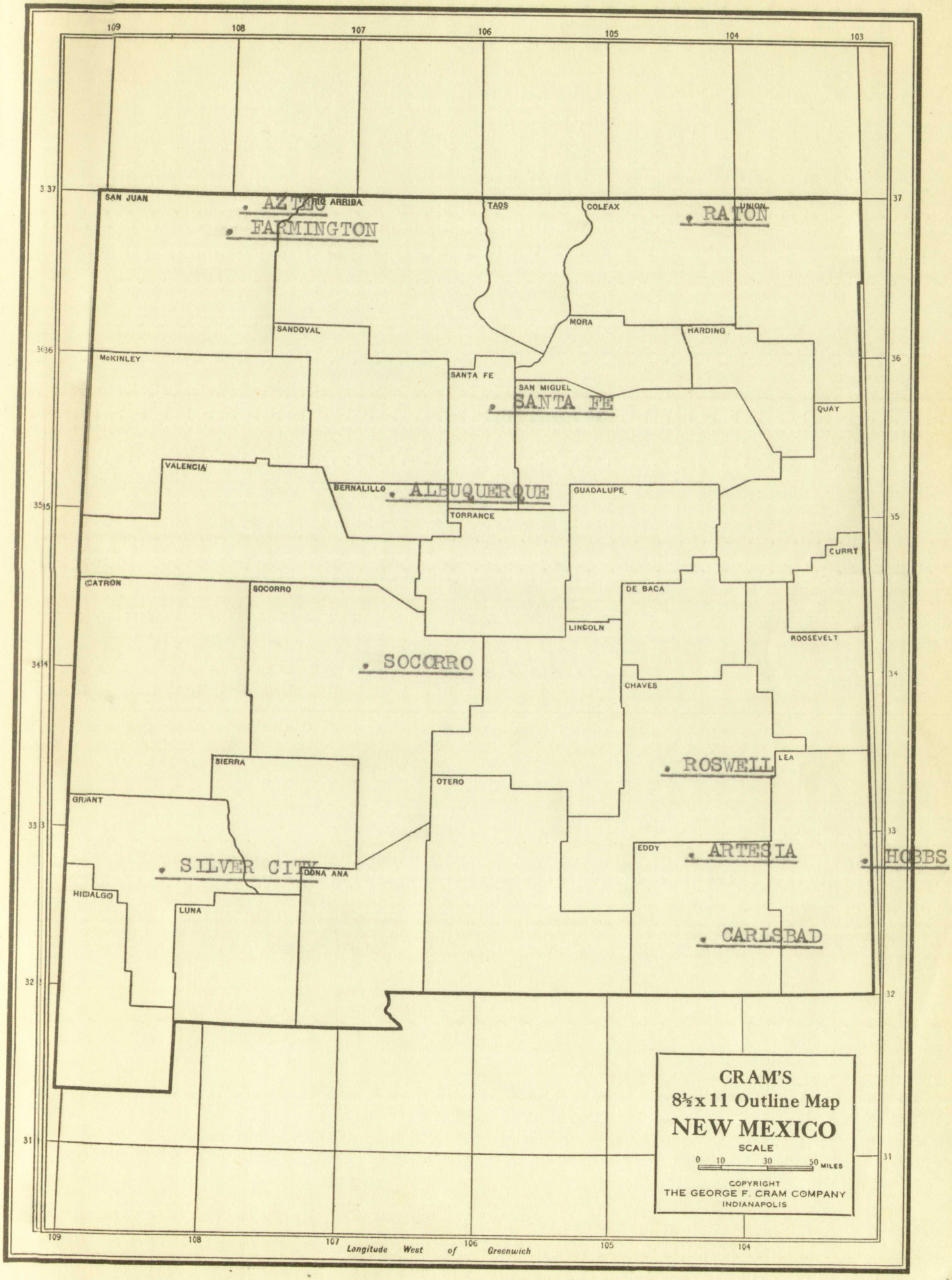
8. Encouraging a uniformity of rules and regulations regarding safety, and liability and compensation rates.

9. Careful consideration of all conditions which may arise and affect the mining industry.

10. The maintenance of a central office equipped to render a maximum of varied services to the mining and related industries and to all persons interested therein.

RECENT ADDITION

11. The establishment and maintenance of local chapters in communities throughout the state where such chapters are justified and desired.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