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Oil conservation in New Mexico

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This is one of many related papers that were included in the 1950 NMGS Fall Field Conference Guidebook.

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OIL CONSERVATION IN NEW MEXICO

By R. R. Spurrier
State Geologist

New Mexico is at present the seventh oil-producing state of the nation. Despite the fact that it is one of the foremost oil and gas producing areas of the United States, New Mexico is semi-developed insofar as her potential oil and gas resources are concerned. This situation is the result of small population, inadequate local markets, and extreme distance from outside market areas. However, this problem is gradually being remedied by the development of new pipe line and other transportation facilities. It is unfortunate that New Mexico has always been dependent to some extent on outside markets to develop her basic resources. It has been pointed out elsewhere in this book that in the early days of petroleum exploration in the United States, New Mexico was not considered as a particularly favorable area for oil or gas exploration. This opinion resulted from a combination of misconceptions and narrow-mindedness that unfortunately still permeates the more conservative element of the petroleum industry.

Today the oil industry in New Mexico employs about 10,000 persons on a full-time basis and hundreds of others for varying periods of exploration or development work. The oil industry provides nearly ten million dollars per year in revenue to the state, and, in addition, the State Land Office has received over ten million dollars in royalties and rentals from oil and gas. These figures are over and above salaries and other expenditures in the state. The oil industry contributed fourteen million dollars to New Mexico's educational system for the 1949 fiscal year. This is derived from income in royalties on state and federal lands, plus other taxes. As the oil industry expands it increases the general prosperity of the state by bringing in new population and expanding the flow of goods and services. This in turn means larger local markets, increased purchasing power, and increased income to the state directly through taxes, and indirectly through wages and other sources. The development of New Mexico's oil and gas resources has contributed in the past in a large measure to the prosperity of the state. New discoveries and increased exploration are continuing to expand the industry and the maximum development is not in sight. New Mexico still contains many comparatively unexplored areas that will undoubtedly be the locus of new oil and gas fields in the future. The San Juan Basin is relatively one of our frontier areas, and its development will help keep our petroleum industry prosperous and progressive.

Conservation means to preserve, guard, or save, but not in the sense of something being secured in a vault. When applied to natural resources, conservation means wise use. Good conservation practice requires the elimination of wasteful or harmful practice insofar as possible.

The New Mexico Oil Conservation Commission was formed by Chapter 72 of the 1935 legislative session. At that time there was no official regulatory body within the state whose purpose was the conservation of our oil and gas resources. Prior to 1935, the State Geologist acted in a supervisory capacity to regulate the location, drilling, and plugging of wells in the state. However, this arrangement was too loose and did not allow for the proper protection of our petroleum reserves. After 14 years, the 1949 legislature revised and expanded the Oil Conservation Act to include control over gas and to strengthen the rules and regulations of the Oil Commission. The New Mexico Oil Conservation Commission is composed of the Governor, the State Land Commissioner, and the State Geologist. The Governor is the chairman, and the State Geologist is secretary and administrative head.

The Oil Commission derives its funds from a tax of 1/8 of one percent of the gross proceeds of sale of all oil or gas produced within the state, and this tax is paid by the petroleum industry. The Oil Commission fund is so arranged that its moneys are not available to the general tax fund. The cost of administering our conservation laws falls upon the oil and gas industry, rather than upon the general public. All administrative expenses are met from the Oil Commission fund and the duties of the Commission are carried out at no cost to the general taxpayer. As now constituted, the New Mexico Oil Commission has its main offices at Santa Fe. In this office the State Geologist and his staff supervise the statewide activity of the Commission. The Oil Commission has three field offices, one each in Aztec, Artesia, and Hobbs. Each of these offices is under the supervision of an oil and gas inspector. It is the duty of these field offices to act as direct liaison between the Oil Commission and field developments. Weekly reports are submitted to Santa Fe by each field office. The state is divided into four districts to provide for more efficient supervision, and each field office is responsible for its own district.

Specifically, these district offices and their jurisdictional areas are as follows:

District 1	Hobbs	Lea, Roosevelt, Curry, De Baca, and Chavez Counties
District 2	Artesia	Eddy, Otero, Dona Ana, and Lincoln Counties

District 3	Aztec	San Juan, Rio Arriba, McKinley, and Sandoval Counties
District 4	Santa Fe	The balance of the state not in Districts 1, 2, or 3

An additional duty of the Oil Commission is to gather information on all oil and gas development within the state and to compile statistics in this regard. New Mexico is a charter member of the Interstate Oil Compact. This is a compact composed of the oil and gas regulating bodies of 21 states. Compact meetings are held quarterly at which time the best conservation engineers of the nation gather to exchange ideas and discuss problems. The Commission has been influential in causing the development of pressure-maintenance projects in the state. There are now four of these, and a fifth and sixth are in the formative stage.

The Oil Commission acts as a quasi-judicial body, and hearings are held each month to consider deviations from usual producing practices or exceptions to established rules in order to guard against wasteful practices.

Every drilling oil or gas well is closely watched to eliminate the possibility of contamination of potable water zones or the flooding of mineralized sections through improper casing or plugging practices.

The petroleum reserves for our state are estimated at 592 million barrels, or 2.8 percent of the nation's reserves. Since 1924, we have produced 631 million barrels. At the close of 1949 there were 5,693 producing oil wells which produced during that year 47,608,860 barrels of oil, a daily average production of 130,435 barrels. The production of this oil is closely regulated by the Commission by setting an allowable for each well every month. This allowable is set after a study of the reservoir conditions and performance, above-ground storage, and market demand. This gives each producer his fair and equitable proportion of the state's monthly production, consistent with good conservation practices.

The estimated gas reserves for the state are in excess of twenty-five trillion cubic feet, or enough

to last at our present rate of production about 450 years. The San Juan Basin of New Mexico is estimated to have ten and one-half trillion cubic feet or 42 percent of these reserves. As the Commission has been charged directly with the conservation of natural gas for less than a year, gas prorationing has not been established; however, plans are being formulated to do so at some future date if this should become necessary.

It is a policy of the Oil Conservation Commission to encourage the development of relatively unexplored areas which have reasonable merit. It was for this reason that the Commission intervened in the petition of the El Paso Natural Gas Company before the Federal Power Commission for permission to build a gas pipe line from the San Juan Basin to California. The Commission's principal object before the FPC was to testify as to the reserves and potential of the Basin and thereby aid in obtaining an outlet for the gas which it felt could never be developed without adequate marketing facilities.

After months of studying well potentials, logs, production records, and geology, the following reserve figures were determined as reasonable for the San Juan Basin:

Proven reserves	2,288,000,000 mcf
Semi-proven reserves	8,239,000,000 mcf
Proven & semi-proven	10,527,000,000 mcf

Permission to construct the San Juan Basin to California pipe line has been granted by the FPC and it is under construction at this time. As a result, the San Juan Basin is enjoying a period of exploration and prosperity that exceeds anything in its previous history. This activity will also benefit the state as a whole.

The New Mexico Oil Conservation Commission is aware of its responsibility and is constantly working to acquaint itself with more modern and better methods of oil and gas conservation and to assist in every way the orderly development of the state's oil and gas resources which will accrue to the greatest benefit of the state as a whole.