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MINERAL RESOURCES IN KINGMAN COUNTY, KANSAS

By

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*For ground water summary
see letter to Deane Sutton,
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In addition to water and soil, the known economically important mineral resources in Kingman County include oil and gas (including helium), sand and gravel, and ceramic clay.

Oil and gas. -- The Cunningham oil and gas field in the northwestern part of the county and in the eastern part of Pratt County is one of the important fields of Kansas. The Cunningham pool was discovered in January, 1931. Oil had been found previously in Kingman County in what was known as the Kingman pool. This pool was discovered in January, 1926, and was abandoned in 1927 after 27,000 barrels of oil had been produced from the discovery well. Oil production came from Mississippian limestone at a depth of 3,853 feet.

The Cunningham oil and gas field was combined with the Cairo pool in eastern Pratt County in 1944. The enlarged field covers more than 20,000 acres and contains 120 wells. Gas occurs in Permian rocks in seven formations, in several Pennsylvanian formations, and in the Viola and Arbuckle dolomites. It is remarkable that gas is found in so many zones. Most of the gas now being produced comes from the Viola dolomite at a depth of about 4,278 feet. Oil is produced from three zones in the Lansing-Kansas City rocks of Pennsylvanian age. In 1945 the field yielded 5,476,480 barrels of oil and 5,581,233,000 cubic feet of gas. Helium is a valuable product of the gas.

Kingman County as a whole has not been adequately tested for gas and oil. Two test wells were drilled in 1942, six in 1943, three in 1944, and seven in 1945. Up to the present time three have been reported in 1946. These were all in unproved territory and all dry holes.

Salt. -- The great body of rock salt that underlies much of Kansas and

occurs in the Wellington formation (Lower Permian) underlies all of Kingman County. The salt beds range in thickness from about 200 feet in the southeast part of the county to more than 500 feet in the southwest part. The top of the salt is about 500 feet below the land surface in the southeastern corner of the county and about 1200 feet below it in the northwestern part. Because of shale partings in the salt the whole thickness is not regarded as mineable but it is estimated that virtually pure salt beds 8 to 10 feet thick comprise 85 per cent of the thickness.

For some time there has been an increased tendency to produce salt from brine wells rather than by underground mining. Reasons for this are obvious because of the greater economy of drilling and operating wells compared with sinking shafts and mining by ordinary methods. Many uses require salt as brine or salt of a higher degree of purity than is commonly obtained by crushing and screening rock salt. Large users in the chemical industries demand pure salt commonly as a brine delivered through pipe lines.

Kansas is now producing about 6 per cent of the total salt output in the the United States. Plants are operating at Lyons, Hutchinson and Kanopolis. About 50 per cent of the salt produced in the United States is used by the chemical industries. Uses of salt produced in Kansas are chiefly in meat packing, in the making of dairy products, in food processing, in refrigeration, for feeding to livestock, in dust and ice control, for table use, and in agriculture.

Although Kansas has almost no local market for salt in chemical industries, recent studies indicate that an electrolytic caustic-soda-chlorine plant might be successfully operated in Kansas in an area of abundant natural gas and salt. To properly locate such a plant would require exhaustive studies of markets, prices, and freight rates regarding the many chemicals that are used in Kansas and are derived directly or indirectly from salt.

Sand and gravel. -- Like many other parts of Kansas, Kingman County has abundant sand and gravel suitable for constructional uses.

Ceramic clay. -- Tests made in the laboratories of the Geological Survey indicate that much of the outcropping shale and clay in Kingman County is adapted for making high grade brick and tile.

Because of the abundance of natural gas, the abundance of salt, and the presence of more commonly distributed constructional raw materials Kingman County appears to be among the parts of Kansas that are favorable for the establishment of certain mineral industries. It might be well to point out that one new industry is generally followed by and supported by other industries. If caustic soda were made in Kansas it could be used in soap manufacture related to the meat packing industry. Chlorine and caustic soda might find a market in the production of paper from Kansas wheat straw. In parts of the country many small electrolytic caustic-soda-chlorine plants operate in conjunction with paper mills. There is likewise a possibility that synthetic fibers might be made from wheat straw, natural gas, or coal tar in which event large volumes of caustic soda, soda ash and chlorine would be required.

REFERENCES

The following selected references may be of interest to those who are concerned with advancing the mineral industries in Kingman County.

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