

MID-CONTINENT REGIONAL MEETING, WICHITA,
SEPTEMBER 30-OCTOBER 2, 1953

ABSTRACTS

1. JOHN C. FRYE, State Geological Survey of Kansas, Lawrence. Activities of the State Geological Survey of Kansas

The State Geological Survey of Kansas, organized as a division of the University more than 50 years ago, has acquired its present scope and general plan of operation during the past 15-20 years. As the only State-supported agency charged with the responsibility of research in geology and mineral resources (including ground water) and service to the State's ever-expanding mineral industries this is indeed a large responsibility. The Kansas raw mineral output has been substantially exceeding 400 million dollars annually and the value of well water to agriculture, industries, and municipalities may approach a like amount. In addition to oil, natural gas, and coal, Kansas raw minerals now in production include: chalk, chat, clay, diatomaceous marl, dimension stone, gypsum, lead, limestone, salt, sand and gravel, sandstone, shale, silica sand, volcanic ash, and zinc. Mineral materials that have been investigated and constitute potential future additions to this list include anhydrite, asphalt rock, bentonite, feldspar, glass sand, high-alumina clay, lignite, oil shale, phosphatic shale, and pyrite.

In recent years the Survey's program has expanded from areal geologic mapping, subsurface studies, production statistics, and county ground-water investigations to diversified work in the field of mineral technology including petroleum engineering. In fact, at the present time the technical staff of the organization contains about as many ceramists, chemists, physicists, and engineers as it does geologists. The Kansas Survey is organized in departments of basic geology, publications and records, mineral resources (including sections of oil and gas, subsurface studies, petroleum engineering, ceramics, geochemistry, petrography, and the Pittsburg district office), ground-water resources, mineral fuels, and topographic mapping—the last three of which work cooperatively with the U. S. Geological Survey.

2. E. C. REED, Nebraska Geological Survey, Lincoln. Paleozoic History of the Central Nebraska Basin and Its Relation to Anticipated Oil and Gas Exploration

The western part of the Central Nebraska basin, which appears to be a northward extension of the Salina basin of Kansas, has been the scene of active leasing and seismographic investigations during the past year, particularly in Harlan, Phelps, Kearney, Buffalo, Sherman, Valley, eastern Custer, and eastern Dawson counties and an active drilling campaign in this area is anticipated. Most of the interest seems to be localized within a broad band along the western side of the basin where the truncated edges of the pre-Pennsylvanian Paleozoic formations are overlapped by the Pennsylvanian and west thereof where there are stratigraphic trap possibilities in connection with Lower Pennsylvanian sands that may wedge out against the pre-Cambrian surface as it rises in the Cambridge arch.

The known distribution, stratigraphy, and lithology of the pre-Pennsylvanian formations within this basin are discussed and the probable Paleozoic history of the region reviewed. The Pennsylvanian lithology, distribution, and facies changes are outlined. It is concluded that suitable reservoir rocks occur at reasonable drilling depths in connection with formations of several geologic ages although oil source possibilities and local structural conditions are hard to evaluate. Important unconformities at the base of the Mesozoic, at the base of the Pennsylvanian, and at the base of the Simpson present some interesting possibilities but also suggest that the region should not be condemned on the basis of a comparatively few tests that may not be located to test more than one possibility adequately.

3. JOHN EMERY ADAMS, Standard Oil Company of Texas, Midland, Texas. Non-Reef Limestone Reservoirs

Bedded limestones and reefs are normally parts of a gradational sedimentary series with the reefs concentrated in the seaward areas. Many major oil fields produce from bedded limestone reservoirs. Bedded limestones are composed of clastic particles which, when coarse-grained and cleanly washed, resemble clean sharp sands. If porous, permeable accumulations of clastic carbonates are connected with source beds and sealed with an impervious cap, primary reservoirs result. Lime muds may be excellent source rocks. Dolomitization and secondary solution may improve but do not initiate limestone reservoirs. Fracturing is the main agent for secondary reservoir development.

4. D. A. MCGEE, Kerr-McGee Oil Industries, Inc., Oklahoma City. The Petroleum Geologist in the Atomic Age

As petroleum geologists, we are in the business of finding and supplying energy. It has been estimated that the world has used two-thirds as much energy in the last 100 years as in the preceding 18½ centuries. The United States is now using approximately 50 times more energy than it did 150 years ago. Oil and gas are now supplying 57 per cent of the energy requirements of this country.