

1941, commercial amounts of oil were first found in the Sundance formation (Upper Jurassic) in the Wilson Creek field, Rio Blanco County, Colorado.

In Wyoming the Frannie field, Park County, was extended almost one-half mile northwestward into Carbon County, Montana; Sundance production was extended eastward and southeastward about one location in the Lance Creek oil field, Niobrara County; the Labarge oil field was extended westward by relatively active drilling; and Tensleep sandstone production was extended about $\frac{1}{4}$ mile northeast in the Wertz oil field, Carbon County. Gas production in the Frontier sandstone (Upper Cretaceous) was extended about $\frac{1}{2}$ mile northwestward in the Muskrat field, Fremont County, and less than $\frac{1}{2}$ mile southeastward in the near-by Big Sand Draw field. In the Hiawatha field, Sweetwater County, commercial gas was found in the Wasatch formation (Eocene) about a mile north of the nearest producer.

In Colorado, a good Morrison (Upper Jurassic) sand well was found in the Wilson Creek oil field, Rio Blanco County, $\frac{3}{4}$ mile southwest of the nearest producer; and on the east side of the Hiawatha oil and gas field, Moffat County, one relatively large oil well and one relatively small one were found in sandstones of the Wasatch formation.

During the year, very few important wildcat wells were drilled in the district. In Montana, a 7,116-foot dry hole was drilled through the Sundance sand on the Absarokee structure, Stillwater County. In Wyoming, a 6,302-foot dry hole was drilled to Pennsylvanian beds in the Middle Baxter Basin area, being the first well to test certain lower zones in the Baxter Basin fields; a 4,243-foot dry hole was completed in the Deadwood formation (Cambrian) on the Bull Creek structure, Crook County; and an 8,343-foot dry hole was completed in the Tensleep sandstone on North Geary dome, Natrona County.

A new depth record for drilling in Wyoming was established at 10,121 feet in the Badger Basin field, Park County.

Several relatively short pipe lines were built in the district during 1940, one of the larger ones being the 100-mile line between the Billy Creek gas field, Johnson County, Wyoming, and the Big Sand Draw gas line at Casper.

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Paleozoic Correlations from Southern Rocky Mountain Front Range to Oklahoma-Texas Panhandles

By means of measured sections and well logs tentative correlations are made from Colorado Springs to the Amarillo Arch. While these correlations are not absolute they are presented in the hope that they may be of use to geologists working in the areas or with the formations involved. The "crinkly limestones" of the Front Range are believed to represent a zone, rather than definite beds which may be followed continuously. This zone is believed to correlate, at least in part, with the Blaine gypsum, and San Andres and Kaibab limestones. The Lyons sandstone, the age of which has been a serious problem because of lack of fossils, is provisionally correlated with the Glorietta of New Mexico and the Duncan sandstone of the Panhandles. By means of well logs and cuttings the Stone Corral anhydrite and dolomite is carried from the Texas Panhandle into Baca and Las Animas counties in Colorado. Its probable equivalent is shown in well logs to extend into the area between Pueblo and Colorado Springs, where its identity is lost in the upper part of the Fountain arkose. According to this interpretation the Fountain formation would range in age from Cherokee, or perhaps even pre-Pottsville, to Permian. Evidence presented tends to indicate that the Amarillo Mountains may have been uplifted beginning in early Pennsylvanian time and continuing until late Pennsylvania time and that the Marmaton was a period during which great sheets of arkose were deposited in widely scattered areas in central Kansas, along the ancestral Rocky Mountains in Colorado and northeastern New Mexico, and along the flanks of the Amarillo Mountains in the Texas and Oklahoma Panhandles, their distribution being controlled by streams rather than offshore currents. The arkoses of the Oklahoma Panhandle may be the attenuate edges of the arkose sheets of the Texas Panhandle or they may have had a more proximate source.

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Results of Petrographic Studies of Sandstone Cores from Rocky Mountain Structures

Detailed petrographic studies of sandstone cores from productive and non-productive structures in the Rocky Mountain region were made to determine not only the