

THE MILROY FIELD OF STEPHENS AND CARTER COUNTIES, OKLAHOMA*by*FRED P. SCHWEERS¹**Abstract**

EDITOR'S NOTE: We present only a short abstract of Fred Schweer's very important paper because it is to appear in full in a coming volume of the Symposium on Oklahoma Geology. We are sorry not to be able to print the whole article with all illustrations to add to the prestige of the Digest.

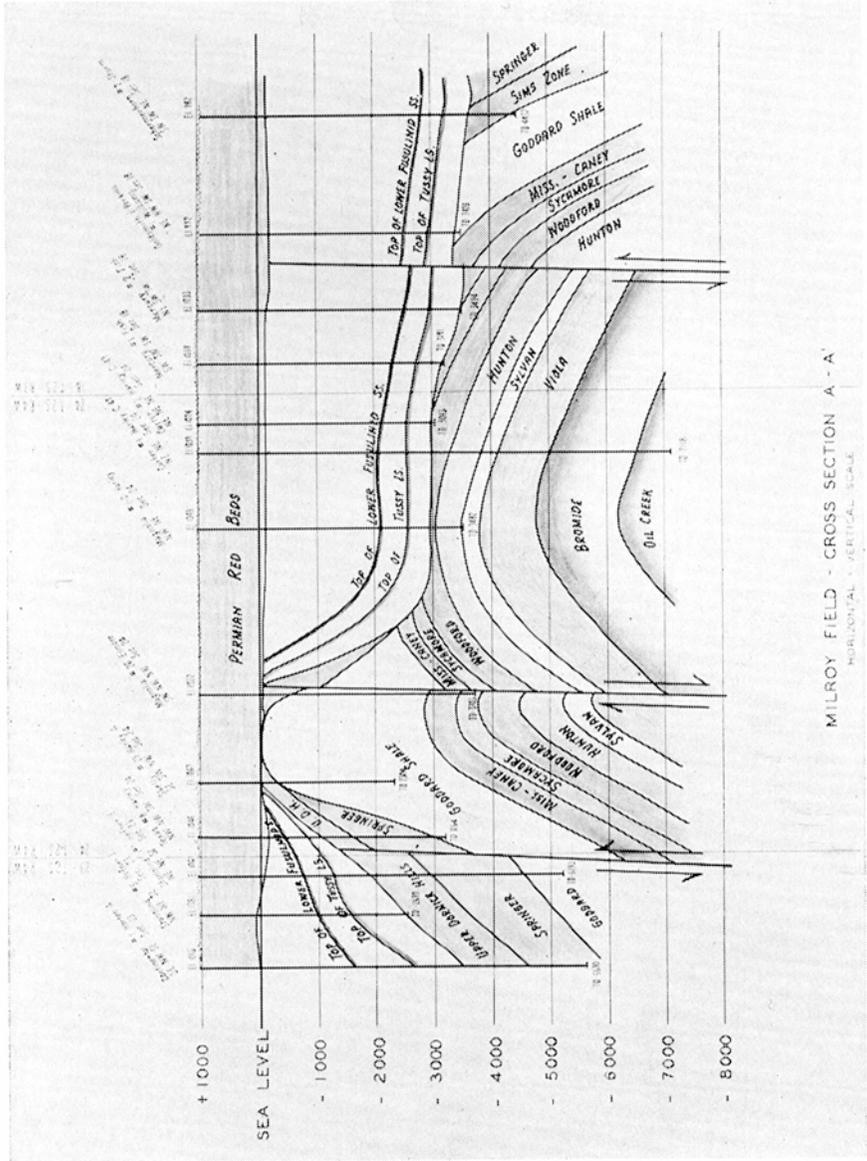
The Milroy Field comprises 2,650 productive acres lying in the eastern part of 2S-4W and the western edge of 2S-3W. The discovery well, Gypsy #2 Bowers, Section 13-2S-4W was completed in 1917 for 20 barrels of oil per day, at a total depth of 1095'. The original wildcat, the #1 Bowers, was abandoned the month before at a total depth of 2750'. This depth remained the deepest penetration on the structure until 1937 when Carter Oil Company drilled its #1 Harley C-49, NE NE, Section 24, to a total depth of 8157' in the Oil Creek formation for an initial potential of 1,215 barrels of oil per day.

After having produced 197,339 barrels of oil from the Oil Creek Oolitic, the #1 Harley was perforated in the Chimney Hill Section of the Hunton two years later; in May 1954 the well had produced 998,000 barrels of oil from both horizons, at which time it had declined to 13 barrels of oil per day. Carter offset the well to the east but found salt water in the Oil Creek pay. Skelly's #1 Chilton-Mayo, drilled in Section 14 during 1955, is the only other Simpson test in the field but it did not reach the Oil Creek formation.

The Milroy structure is an elongate anticline with small closure in the Permian but having in excess of 2500' in the pre-Pennsylvanian beds. It is part of the Graham-Velma segment of folding which parallels the Wichita Mountains-Criner Hills anticlinorium; the two positive features are separated by the Harrisburg Trough. It is believed that a major fault downthrown to the south paralleled the south flank of the Milroy structure during post-Morrow time. Subsequent to its inception, the Upper Dornick Hills sediments were deposited on the downthrown side simultaneously with erosion on the upthrown or north side. Before or immediately after the close of Upper Dornick Hills deposition, compressional movement from the southwest and south forced the downthrown segment upward along the original fault plane so that it overrode the pre-Pennsylvanian rocks of the core of the structure. This structural relationship is similar to that of the Overbrook-Criner Hills structures. Other faulting on the structure has had as its chief effect the creation of separate reservoirs within the producing sections.

Aside from Carter #1 Harley C-49 discussed above, production in the field has been from Permian, Deese, Dornick Hills, Sycamore and Bois d'Arc sections. Because porosity in these horizons has been spotty without good permeability connections, production has not been large until stimulated by fracture treatment. In 1954, the cumulative production of the field was

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estimated at about 9,200,000 barrels or approximately 3,500 barrels per acre. The gravity of the oil varies from 25° to 50° with the higher gravities being at the lower depths. Although barely over twice as many wells were producing in 1955 as in 1935, deeper drilling combined with modern completion techniques increased the daily production more than ten-fold.