"MISSISSIPPIAN PRODUCTION WITHIN THE KANSAS PORTION OF THE HUGOTON GAS FIELD WITH SPECIAL EMPHASIS ON THE PLEASANT PRAIRIE AND EUBANK POOLS"

F. O. BENNETT

The Kansas Portion of the Hugoton Gas Field is located in the Hugoton Embrayment, northwestern extension of the Anadarko Basin. The shallow Permian gas formations provide excellent core drill data, with the Winfield lime generally used as the marker bed.

The discovery well of Pleasant Prairie Pool, Helmerich & Payne's Jones "O"-16, was completed May 3, 1954 in the St. Louis Formation. It was drilled on a prominent Winfield structure exhibiting 69' of critical west dip and 87' of north dip. Subsequent drilling by the same company, of nearby Winfield anomalies, opened the South Side and Northwest Pleasant Prairie Pools in 1956-1957.

The three pools have been combined as the Pleasant Prairie Pool which now includes 67 producing wells, one abandoned well and three dry holes. Two low dry holes on the west side of the structure indicate late Mississippian or early Pennsylvanian faulting.

Production is obtained from as many as four porous oolitic zones in the top 90' of the St. Louis Formation with the principal zone, always present, occurring at approximately 70' below the top of the St. Louis. Effective pay thickness ranges up to 50' with reserves estimated to 275,000 barrels per well. Porosity and permeability vary considerably. Production tests range from no fluid natural to 122 BOPH natural and 210 BOPH after acid frac.

Eubank Pool, on a Winfield structure eight miles south of Pleasant Prairie, was opened in March, 1958 by White Eagle Oil Company's #1 Eubank, Section 28-28S-34W, Haskell County. Initial potential was 507 barrels of oil per day, flowing from tht Chester sand at 5424-44'. The Chester formation wedges out within a distance of two miles to the north.

Subsequent wells have logged three separate sand lenses aggregating 61' in thickness and 48' in net pay. Fourteen wells have been completed in the Chester and five in shallower formations.