

APRIL 13, 1989
NARRATIVE FOR
LYMAN COUNTY, SOUTH DAKOTA
OIL AND GAS DEVELOPMENT POTENTIAL MAP

INTRODUCTION:

Lyman County is located in the southcentral part of the state. It covers T. 101-108 N., Rgs. 71-79 W., 6th Principal Meridian. The Missouri River is on the east and north county line and Jones County is to the west. The topography is rolling hills and open grasslands.

Regional geology shows the Cretaceous age Pierre Shale to cover the entire surface of the county. Structurally the Pre-Cambrian basement rock varies from -600 to + 200 feet above mean sea level across the county. A major fault system has been mapped in the northeast corner of the county by Houser (1987). The system strikes in a northwest direction and is related to basement faulting. The regional dip in the county varies considerably because of the fault system.

There have been only 6 wells drilled in the entire county, and only two in the past 15 years. Currently there is no production in the county.

The Lower Brule Indian Reservation is in the northeastern part of the county, and these lands were not classified.

OCCURRENCE POTENTIAL:

All of Lyman County is classified as moderate occurrence potential except the area east of the fault which is low potential. This is based on the presence of a sedimentary package of Paleozoic and Cretaceous age rocks that are only 2,000 to 5,000 feet thick with no established production in the county.

The type log for this county is the #1 Hutchinson, sec. 24, T. 103 N., R. 77 W.. The well was drilled in 1967, spudded in the Pierre Shale and reached maximum depth in the Pre-Cambrian at a structural elevation of -570 feet below sea level.

DEVELOPMENT POTENTIAL:

All of Lyman County is classified as moderate development potential except the area east of the fault which is low potential. This is because the sediment package that is known to exist in this county contains potential source and reservoir rocks that produce elsewhere in the state, and possible structural or stratigraphic traps. Because there is no production or no significant shows from the drilling that did occur, this county has only a moderate development potential west of the fault.

Based on the past and current drilling in the county, activity is expected to remain the same, with only one or two wells being drilled in this county in the next 15 years.

REFERENCE CITED

Houser, B. B., 1987, Southwestern bounding fault of the Sioux Quartzite, South Dakota: U. S. Geological Survey, Open File Report 87-626, 11p.