

January 9, 1997
NARRATIVE FOR
WALWORTH COUNTY, SOUTH DAKOTA
OIL & GAS DEVELOPMENT POTENTIAL MAP

INTRODUCTION

Walworth County lies east of the Missouri River in north-central South Dakota. The topography in this county ranges from the dissected "breaks" of the Missouri River in the western portion of the county to the flat plains in the eastern half of the county. Geologically, Walworth County is on the southeastern flank of the Williston Basin. Currently, there are no producing oil and gas wells in this county.

OCCURRENCE POTENTIAL

All of Walworth County falls in an area of moderate oil and gas occurrence potential. Regional geologic mapping (Mallory, 1972, p. 56) indicates this county is underlain with 3000-4000 feet of sedimentary rocks. This is the same package of rocks which contain source beds and producing reservoirs in other parts of the Williston Basin.

DISCUSSION OF DEVELOPMENT POTENTIAL RATINGS

No part of Walworth County has been designated as high development potential, because there have been no oil & gas wells drilled in the county in the last fifteen years and only minor oil & gas shows were encountered by the wells drilled prior to 1973.

However, all but one township of Walworth County is rated as moderate development potential. Three oil and gas tests were drilled in this county to evaluate the Cretaceous Muddy Sandstone, in response to large Muddy discoveries in the late 1960's in the neighboring Powder River Basin of Montana. None of these tests encountered any shows. However, other areas of South Dakota have reported oil and gas shows in the Muddy (Bolyard, 1969). Two additional wells were drilled down to the Precambrian basement rocks in this county. One of these wells, the Max Pray #1 Kranzler (T.121N., R.77W., Sec. 14), did encounter some oil shows in the cuttings of the Paleozoic section of the well. Wildcatting and some very limited development in the Muddy Sandstone and deeper Paleozoic rocks may occur in this county in the next 15 years.

The extreme southeastern township of this county is rated low development potential because it is outside the perimeter of the

Williston Basin, because of the thin sedimentary cover, and the lack of data from oil & gas drilling in this township. Widely-spaced wildcatting may occur in this area in the next 15 years.

REFERENCES CITED

Bolyard, Dudley W., 1969, Muddy sand potential in South Dakota, in Eastern Montana Symposium: Montana Geological Society 20th Annual Field Conference, p. 85-94.

Mallory, W.W. (ed.), 1972, Geologic atlas of Rocky Mountain Region: Rocky Mountain Association of Geologists, p. 56.