

non-commercial wells. One dry hole was drilled on the steep west flank by the California-Canadian Company. Three Unit wells are being drilled at present, and one competitor location is drilling. Development is on an 80-acre pattern.

For the week ending, December 10, 1954, 13 wells produced an average of 1,789 barrels of oil per day. Cumulative production to December 1, 1954, was 681,390 barrels of oil; 94,467 MCF gas.

20. IGNACIO GAS FIELD, LAPLATA COUNTY, COLORADO.

D. M. FEREBEE, Stanolind Oil and Gas Company, Albuquerque, New Mexico.

The Ignacio gas field, a closed anticline in the northeastern lobe of the San Juan basin, has two proved commercially productive zones; one, the Fruitland-Pictured Cliffs, the other in the Dakota-top of the Morrison. Porosity and permeability are the controlling factors in the Fruitland-Pictured Cliffs reservoir, whereas fracturing in the Dakota-top of the Morrison reservoir is of primary importance.

21. DISCOVERY PAPER—ORDOVICIAN OIL IN SOUTHERN BIG HORN BASIN, WYOMING.

A. J. CROWLEY, Continental Oil Company, Denver, Colorado.

22. TIP TOP FIELD, SUBLETTE COUNTY, WYOMING.

RICHARD A. HOWE, General Petroleum Corporation, Salt Lake City, Utah.

The Tip Top field of western Wyoming has two wells producing oil from the Nugget sandstone Jurassic age and several outlying shut-in gas wells capable of production from the Cretaceous Frontier formation. Daily oil production amounts to approximately 300 barrels from a depth of 10,000 feet. Gas wells have an average capacity of 2,000,000 cubic feet per day in the 7,000-foot depth range.

Oil is trapped in the upper fractured part of the Nugget sandstone on the upthrown side of a thrust fault. Frontier formation gas production is localized in both upthrown and downthrown fault blocks on the anticlinal fold.

Low pressure-high volume gas is produced in the Tip Top Shallow and Big Piney gas fields from lenticular sandstones in the Tertiary Wasatch formation.

23. GEOLOGY OF CLEAR CREEK GAS FIELD AND VICINITY, CENTRAL UTAH.

WALTER E. ZABRISKIE, Three States Natural Gas Company, Price, Utah.

The Clear Creek gas field, Carbon and Emery counties, Utah, was discovered in October, 1951, when the Byrd-Frost Corporation completed the Utah Fuel Company well No. 1. The prospect was drilled on a large highly faulted anticline located on the mountainous Wasatch Plateau of central Utah. The producing zone is the Ferron sandstone member of the Mancos shale. Seventeen additional field wells have now been drilled into the Ferron sandstone. Fourteen of these wells were producers, two were dry holes and one was abandoned because of mechanical difficulties.

24. STRATIGRAPHIC GAS DEVELOPMENT IN BLANCO-MESA VERDE POOL OF SAN JUAN BASIN.

R. W. ALLEN, JR., El Paso Natural Gas Company, Farmington, New Mexico.

The Blanco-Mesa Verde gas pool was discovered in 1926 by the Huntington Park Oil Company's Geode No. 1, Sec. 29, T. 30 N., R. 9 W., San Juan County, New Mexico. The area of present production is 64 miles long and 34 miles wide, containing an estimated 847,800 acres. The pool lies in a large asymmetrical syncline. Gas is produced from the Cliff House and Point Lookout sandstones of the Mesa Verde formation of the late Cretaceous.

Gas accumulation is controlled by lenticular sands and permeability and porosity changes in the individual sands. It is suggested that the gas is coming from interfaces rather than from the sand bodies which have very low permeabilities and porosities. Initial well potentials range to 30,000 MCF/D. The cumulative production on January 1, 1953, was 102,888,160 MCF.

25. CAT CREEK OIL FIELD, PETROLEUM AND GARFIELD COUNTIES, MONTANA.

HERBERT D. HADLEY, Billings Geological Service, Billings, Montana.

The Cat Creek oil field of central Montana is one of the oldest and most prolific oil fields in Montana. However, the physical characteristics of the crude, its method of entrapment, and stratigraphic position are anomalous.

The early use of excessive faulting to explain the field can not be substantiated by studies resulting from more recent exploration. Structural evidence seems to indicate a shifting of the subsurface axis toward the steep northern limb of the anticline.

The possible historical relationship of the Cat Creek field, the pre-Cambrian Belt rocks, and the Big Snowy anticlinorium is discussed.

It is concluded that the Cat Creek field has not been completely studied or evaluated and that such a study might lead to finding additional small, shallow oil pools and to a better exploration program for adequately testing the deeper Paleozoic section.

Structural conclusions made for the Cat Creek field may be extended to other structural features throughout central Montana, causing their re-evaluation for possible hydrocarbons.