The section penetrated by wells consists of: Recent, Tertiary, Cretaceous, Triassic, and Permian deposits. The reservoir is in porous dolomite 300 to 600 feet below the top of the San Andres. Detailed examination and recording of the well-cuttings show the body of the reservoir to have a reef-like cross section which may be accounted for by (1) chemical deposition on a marine high, or (2) reef-growth with attendant chemical deposition.

The combination of Permian structure and stratigraphy appears to have controlled the permeability, porosity, and the accumulation of fluids. Later folding modified the position of these fluids somewhat. For the field as a whole there is no direct relationship between the present structural elevation and the ability to produce oil.

The discovery well, Honolulu Oil Corporation and Davidson Drilling Company No. 1 Bennett, was drilled into oil on September 28, 1935. Development has been continuous since that time and 16,388,981 barrels of oil had been recovered from the field on September 1, 1940.

18. W. M. OSBORN, consulting geologist, Midland, Texas
*Stratigraphic Trap of Slaughter Field of West Texas*

The Slaughter field of Cochran, Hockley, and Terry counties, Texas, covers approximately seventy squares miles and on February 1, 1941, it contained 162 producing oil wells.

Present control shows no structural closure. The field is situated on a series of noses dipping gently south-southeast but these do not control production.

The pay section, which is about 100 feet thick, is the Permian San Andres dolomite. The pay is a brown granular dolomite having inter-crystalline porosity. In some parts of the pay section larger openings also occur. The depth to the top of the pay, which is about 800 feet below the top of the San Andres, ranges from approximately 4,900 to 5,000 feet. The southern and eastern limits of the field are mainly determined by the structural position of this pay with reference to the water table.

Production to the west seems to be limited by contamination of the pay section with silt and anhydrite. Two structurally high dry holes on this side of the field showed large amounts of silt and anhydrite in the beds equivalent to the pay section.

The northern limits of production have not been defined but indications point to a breaking down of the section in this direction also.

19. W. A. WALDSCHMIDT, Colorado School of Mines, Golden, Colorado
*Progress Report on Microscopic Examination of Permian Crude Oils*

Studies of several samples of Permian crude oil were made for the purpose of determining the source, character, and amount of the included organic residues. The method of obtaining the residues was similar to that used by Sanders. Diatoms, spines, plant remains, and fragments of other organic materials were observed in the residues examined, but further studies will be necessary before the source of these remains can be determined.

20. TAYLOR COLE, University Lands, Midland, Texas
*Subsurface Study of Ellenburger Formation in West Texas*

Various portions of the Ellenburger (Cambro-Ordovician) formation have been penetrated throughout the West Texas area bounded by Latitude 32° and 30° and Longitude 101° and 103°. The formation consists of fine to coarsely crystalline dolomites and dense limestones. These lithologic units are of no value even in local correlations when accurate work is desired.

A careful study has been made of the insoluble residues from most of the well cuttings available. The chief criterion for correlations is chert. Four main classes of chert are recognized: smooth, granular, chalky, and drusy. Each class may have several secondary characteristics, and gradational types are present. From this work the complete Ellenburger section, which is approximately 1,335 feet thick in western Crane County, has been divided into five zones. These zones when fitted into the section worked by geologists familiar with the Missouri section have approximately the following relationship.

| | |
|---|---|
| Silt zone | Cotter |
| Smooth Chert zone | Jefferson City<br>Roubidoux<br>Gasconade |