

THOMAS A. BALDWIN, Monterey Oil Co., Los Angeles

Productive Possibilities of Butano Sandstone, Santa Cruz County, California

The Butano sandstone formation has been penetrated by 10 modern wells. This principal prospect zone of the Santa Cruz mountain area is a generally impermeable body. More permeable parts of the formation have been located near its top, interbedded with basal parts of the San Lorenzo shale.

Stratigraphic and depositional conditions in which the Butano may be a permeable prospect are still present.

WILLIAM Z. ELMORE AND BENJAMIN C. LUPTON, General Petroleum Corp., Los Angeles

Northwest Extension of West Cat Canyon Oil Field, Santa Barbara County, California

The West Cat Canyon oil field is in the Santa Maria basin, approximately 10 miles southeast of the town of Santa Maria. Production is from Sisquoc (Pliocene) sands, discovered in 1908, and from fractured shales and cherts in the Monterey formation (upper Miocene), discovered in 1938.

The field has a cumulative production (January 1, 1952) of 52,000,000 barrels of oil from 2,900 acres. Of this production, 22,000,000 barrels is from the Pliocene and 30,000,000 barrels from the Miocene.

The Miocene section in the field is similar, in part, to that of the Santa Maria Valley field, the main differences being in the thickness and age of the chert.

The productive limit of the field has been extended northwest by the progressive drilling of step-out wells. The accumulation in the extended area is mainly due to faults which interrupt the north-west plunge of the structure, and to fracturing and resultant permeability above the main producing zone.

IRA H. CRAM, Continental Oil Co., Houston, Texas

Lessons of a Decade

The performance of the petroleum industry during the post-Pearl Harbor decade was outstanding. Lessons of importance regarding the art of discovery and the future of discovery were taught. The more important are reviewed. Analysis of the results indicates that the nation is not running out of resources and the industry is not running out of resourcefulness. The industry, therefore, faces the future with confidence in its ability to find adequate supplies of hydrocarbons. The author is confident that the industry will find such supplies if it recognizes and successfully copes with certain adverse forces. These are discussed in some detail.

HERBERT B. HAGEN, Humble Oil & Refining Co., Houston, Texas

Continuous Profiling Type Dipmeter

The general principles of determining, from a bore-hole, the dip and strike of subsurface formations by a continuous profiling method are discussed. The profiling type dipmeter is based on the principle that the softer formations erode to a greater extent than the hard formations during the drilling process. A part of a dipmeter-survey record is shown to illustrate the computation of dip by measurements taken directly from the log. The device, which makes a continuous measurement of the logging tool's orientation with respect to compass North as well as the amount and direction of the bore-hole inclination, is demonstrated. A true dip computer is discussed briefly.

Results of dipmeter surveys on drilling wells are illustrated and discussed. The results obtained with the profiling type dipmeter have been proved valuable in the study of subsurface conditions.

MILTON C. BORN, Amerada Petroleum Corp., Los Angeles

Geophysical Comparisons at Dinuba, Tulare County, California

A structural anomaly near Dinuba, California, is inferred from four different geophysical surveys and a core hole program. The similarity in contoured results of the applied methods is unique in exploration history. Some idiosyncrasies in comparing geophysical maps are briefly discussed.

S.E.P.M. ABSTRACTS

JOHN F. MANN, JR., University of Southern California, Los Angeles

Influence of Submarine Canyons on Intrusion of Ocean Water into Fresh-Water Aquifer

Detailed hydrologic studies along the California, coast reveal that important fresh-water aquifers are exposed in submarine canyons or, if not exposed, are in hydraulic continuity with the ocean in the canyons. In the typical aquifer, which has a low-angle seaward dip, the effect of submarine canyons is to produce submarine outcrops abnormally close to shore. Under natural conditions, especially during wet cycles, the piezometric surface had a strong seaward slope and fresh water escaped at the submarine outcrops, especially those in the submarine canyons. The volume of stored fresh water in the submarine extensions of the aquifer is reduced by an amount proportional to the volume of the