

LUNCHEON MEETING—JANUARY 29, 1986

WILLIAM E. MERO—Biographical Sketch



William E. Mero, currently Division Geologist for Chevron U.S.A. (Alaska Division) has been with Chevron since 1962. He worked as an Exploration Geologist and Geophysical Interpreter of the Santa Barbara Channel-Onshore California until 1971 in LaHabra, California. He headed the geochemical and geophysical program for geothermal exploration in the western United States until 1977 in San Francisco, California. Mr. Mero was

Project Coordinator for exploration of offshore California and Alaska from 1977-1985 in San Francisco.

Mr. Mero received his AB in Geology from the University of California at Santa Barbara in 1960. He received his MA in Geology from the University of California at Berkeley in 1962. He is a member of the A.A.P.G. and the American Association for the Advancement of Science.

In addition to the Point Arguello discovery, Mr. Mero also was an interpreter for Chevron on the South Salt Lake, East Beverly Hills (Los Angeles Basin), Sacate (Santa Barbara Channel), and Rocky Point (Offshore Santa Maria Basin) discoveries. He is currently presenting his talk on the Point Arguello Field as a Distinguished Lecturer on the 1985-86 A.A.P.G. Distinguished Lecture Tour.

POINT ARGUELLO FIELD — HISTORY AND GEOLOGY OF A GIANT OIL DISCOVERY

The Point Arguello field is a giant field with over 300 million bbls of recoverable oil. The biogenic, fractured Monterey Formation forms the primary source and reservoir in this major offshore California discovery. The trap is a complex, anticlinal structure and difficult to delineate seismically at depth. As is often the case, the original exploration concept differs from the final discovery. Chevron's structural and stratigraphic concepts have changed from the early days to the present.

The Point Arguello structure extends across a thick Miocene depocenter. A low influx of terrestrial clastics, general reducing conditions, high organic productivity, rapid burial, and a high heat flow created an extraordinarily productive oil generating depocenter. Today this small subbasin is ringed by announced and unannounced oil accumulations. Recognition of this "cooking pot" concept was a factor in Chevron's bidding strategy for OCS Federal Lease Sale 53.

In addition, early silica diagenesis of the diatom-rich Monterey within this small subbasin created an attractive Monterey reservoir. By 1970 Chevron and others in the industry were aware of silica phases and their importance in creating a commercial fractured reservoir. By the end of the decade, university research seemed to confirm these earlier observations. However, based on field measurements, some silica phase-fracture relationships have recently been questioned.

A giant accumulation formed under a rare combination of favorable circumstances. Eight wells have delineated two major oil pools whose gravity ranges from 11° to 34° API. The primary reservoir is the middle and upper Miocene fractured cherts, porcelanites, and dolostones. The open-fracture system forms around 1.0 and 2.0% of the reservoir volume.

Three production platforms may be in place by the end of 1986. Careful planning is necessary to ensure a timely development in an environmentally sensitive area.