

# EXPLORATION AND DISCOVERY OF SANTA ANA STRUCTURE GOLFO DE CAMPECHE, TABASCO, MEXICO

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## ABSTRACT

On May 23, 1959, an important oil discovery was made in the tidelands area of the State of Tabasco, off the north or Gulf shore of the Isthmus of Tehuantepec, Mexico. The discovery well, the CIMA Santa Ana 239, located approximately one mile from shore and 40 miles east of Coatzacoalcos, proved prolific production in the Santa Ana dome which promises to be one of the great fields of North America. Judging from well performance and seismic maps, the field has been estimated to have a reserve of more than one billion barrels, and could add in excess of 30% to the known reserves of Mexico. The discovery of this field was made possible by the re-interpretation of old seismic data.

In 1948, Mexican American Independent Company (CIMA) conducted a gravity survey of the tidelands east of Coatzacoalcos, followed by a marine seismic survey of the same area. Surveying was done by the shoran method employing floating base stations and sub-stations. Though gravity indicated a "minimum" closure at Santa Ana, seismic failed to map that locality because of existing complications.

In 1958, CIMA employed the services of the author to reinterpret the 1948 shooting and, as a result, the Santa Ana dome was mapped for the first time.

Upon the author's recommendation, a re-shooting of the tidelands structural areas with modern equipment was conducted by CIMA, who retained the author as consultant. Quality of recordings did not improve and the author was called upon once again to map the Santa Ana structure. Subsequently this structure was mapped also by the contractor and by Petroleos Mexicanos (PEMEX). Plans to drill an exploratory test, the CIMA Santa Ana 239, on the south flank as dictated by water depths were approved by PEMEX based upon their own seismic and geologic studies. The well was dually completed as an important producer being the discovery well of the Santa Ana Field and the first offshore discovery well in Mexican waters.

The success of this venture is attributed, first, to re-interpretation of the early data as later confirmed by carefully supervised re-shooting and, second, to the confidence of management and particularly of Edwin W. Pauley in the seismic results, and, of course, to PEMEX for their own studies conducive to their approval of the drilling of the discovery well.

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