AAPG Datapages/Search and Discovery Article #90302 ©2017 AAPG Pacific Section Annual Meeting, Anchorage, Alaska, May 21-24, 2017

# Undeveloped Petroleum Potential of the Offshore Santa Maria Basin, California

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## ABSTRACT

Offshore seismic surveys (now in the public domain) and exploration drilling led to the discovery of several potential oil fields in the offshore Santa Maria basin, California. The seismic and well data also help to better understand this tectonically complex area. The current transpressional stress regime has created thrusted anticlinal trends extending from onshore, with a long history of oil production, to the offshore discoveries. The anticlinal trends change orientation offshore and merge into the Hosgri fault system. The Hosgri has strike-slip displacement, but the structures are dominantly compressional with strikes sub-parallel to the San Andreas. The offshore wells discovered heavy oil in the Miocene Monterey formation, eight fields north of Point Arguello. Only one of these was developed, Point Pedernales field (106 MMBO). The others were unitized under the federal OCS statutes but became the focus of state political opposition. The wells encountered oil in fractured siliceous rocks and carbonates in the Monterey. These zones have high matrix porosities, but fractures provide most of the permeability. Many of the wells tested relatively low gravity oil (< 15 deg API) at potentially economic rates (100's to 1000's BOPD). Producing this oil offshore has unique challenges. Conservative estimates for the undeveloped fields total 974 MMBO, technically recoverable. They are now on 'open acreage'. Politics, and low oil prices, will keep them from being produced for many more years. Note; this is a companion paper to 'Undeveloped petroleum potential of the western-most Santa Barbara Channel, offshore California' presented at the PCS and RMS AAPG Joint Meeting in 2016.