HGS Dinner Meeting
Monday, September 12, 1994
5:30 - Social and Poster Session; 6:30 Dinner Meeting
The Doubletree Hotel on Post Oak

The Evolving Exploration of the Subsalt Play in the Offshore Gulf of Mexico

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Abstract

The existence of horizontal components of salt movement with probable subsalt traps in the South Additions of the Louisiana & Texas Shelf and Slope, has only recently become commonly accepted. For several decades, hundreds of wells were drilled into salt on the outer shelf and slope of the Northwestern Gulf of Mexico. Unless drilled on the flanks of vertical salt diapirs, which themselves were probably secondary remobilizations of ancestral horizontal salt sills, these wells barely penetrated salt features that are now interpreted as laterally emplaced horizontal salt sheets. These wells all stopped far short of drilling any significant thickness of these salt sills, and certainly thousands of feet short of testing the giant petroleum potential of today's Subsalt Exploration Play, that is now emerging in the Offshore Gulf of Mexico.

Detailed displays of the horizontal aspects of Gulf of Mexico salt tectonics combined with subsalt drilling results are shown using time seismic sections, well logs, and paleobathymetry from over 20 wells drilled through and/or into varying thicknesses of horizontal salt. The presence of massive subsalt sands such as those observed in South Marsh Island Block 200 are now well acknowledged. Subsalt petroleum discoveries announced in Ship Shoal Block 349, South Timbalier Block 260, and in Mississippi Canyon Block 211, demonstrate current success and strongly encourage future exploration efforts. As seismic image resolution continues to improve from advanced acquisition and processing techniques, and subsalt well control refines geologic models and concepts, geoscientific understanding will grow rapidly and lead to additional significant discoveries in multiple styled traps beneath the horizontal salt sills of the Offshore Gulf of Mexico. Multiple styles and areas of style dominance will be discussed.

The evolutionary vertical remobilizations of these sills have clearly structured many of the supra-salt giant fields of the Offshore Gulf of Mexico. The 1990's may well be the Decade of Discovery for this significant petroleum potential that is hidden by the horizontal salt sills that have obscured subsalt seismic images for decades.

Biography - Clint Moore

Dwight "Clint" Moore

Clint is presently Project Geologist for Anadarko Petroleum on their Offshore Gulf of Mexico Exploration Team, and is President of the Houston Geological Society. His 15-year geoscience career has been focused on exploration and development in the Offshore Gulf of Mexico. He has been actively involved with Subsalt Exploration in the Gulf since 1985, when he was Senior Offshore Geologist with Diamond Shamrock (Maxus). As the project geologist on Diamond Shamrock's South Marsh Island Block 200 # 1 well, he helped discover significant massive sands below a regional salt sill. Clint joined Anadarko's Offshore GOM Exploration team in 1987, where he has been the project geologist for the Mahogany subsalt prospect, as well as 15 of Anadarko's 20 other subsalt plays. His geoscientific interests currently involve salt emplacement models and deep water sedimentation systems, as well as low resistivity petrophysical analysis. In addition, he was chief editor and chairman of the HGS/NOGS guidebook on "Productive Low Resistivity Well Logs of the Offshore Gulf of Mexico". He has also served as Vice-President and President-Elect of the HGS. Clint serves in the AAPG House of Delegates, and on the AAPG/DPA Government Affairs Committee. Clint earned degrees in Geology and Business Administration from Southern Methodist University in the late 1970's. He is an AAPG Certified Petroleum Geologist. He is a member of AAPG, GSA, SPWLA, SPE, and SCA, and numerous local geological societies.