HGS-INTERNATIONAL EXPLORATIONISTS DINNER MEETING—APRIL 17, 1991

SHARON A. STONECIPHER—Biographical Sketch

Sharon A. Stonecipher attended Case Western Reserve University for two years and received her B.S. in Geology from Ohio State University. Sharon completed a Ph.D. in Marine Geology at Scripps Institution of Oceanography. Upon graduation she was employed by Marathon Oil at its Production Technology Center in Littleton, Colorado. Dr. Stonecipher's main areas of interest include sandstone petrography, diagenesis, low temperature geochemistry, clay minerals, and empirical diagenetic/stratigraphic modelling. Much of her work concerns the interpretation of depositional environment from textural and diagenetic characteristics for exploration purposes. Sharon has also done extensive work on textural and mineralogic controls on petrophysical rock properties for development and production oriented projects. In addition, she is extensively involved in Marathon's training program. Sharon is a member of AAPG, SEPM, and the Clay Mineral Society.

EVIDENCE FOR DEEP-WATER EVAPORITE DEPOSITION IN THE MIOCENE KAREEM FORMATION, SOUTHWESTERN GULF OF SUEZ, EGYPT

Intercalated Kareem siliciclastics and evaporites provide evidence for the timing of isolation of the Gulf of Suez from the Mediterranean. The evaporites include celestites and massive, "chicken-wire", and laminated anhydrites. Although previously interpreted to represent sabkhas, our core studies suggest these evaporites more likely formed in a submarine setting.

Marls sandwiching the evaporites contain a diverse and abundant assemblage of nannoplankton, planktonic foraminifera and diatoms, pteropods, and fish scales indicative of basinal deposition. Associated turbidites also argue for deep-water sedimentation. The paucity of benthic diatoms and foraminifera, plus the presence of unburrowed shales, phosphate nodules, early ferroan carbonate cements, and authigenic pyrite suggest periodic anoxic, or at least disaerobic, bottom waters.

Beneath the evaporites, foram-rich calcareous shales grade upward to diatomaceous dolomites, organic-rich dolomites, and varved porcellanite. The dolomites change upward into dolomitic shales containing nodular celestite and then chicken-wire anhydrite. Above the evaporites, calcareous shales and shaly limestones recur. Such sequences are best explained by restriction and evaporative drawdown of a standing body of water; increasing salinity probably also caused the progressive upward decrease in foram abundance and diversity in marls beneath the anhydrites. In contrast, a diverse, indigenous nannoplankton assemblage in shale seams within the anhydrites suggests the evaporative basin was stratified; shallow open-marine conditions coexisted with anhydrite crystallization from deeper hypersaline waters.

These Kareem sequences thus suggest partial isolation of the Suez by middle Miocene resulting in restriction and stratification of the basin, leading to periodic hypoxia and subaqueous evaporite formation.