

Stepping Out from the Known: Production Enhancement to Exploration Success in Cuba

Stephen M. Mikalsky*
Sherritt International Corporation,
2124 Palisdale Road S.W., Calgary, AB, T2V-3T6
smikalsky@sherrittoil.com

ABSTRACT

Cuba produces approximately 80,000 barrels of oil equivalent per day of mainly heavy oil from the northern fold and thrust belt between Havana and Varadero. The oil fields are situated offshore but are exploited by highly deviated and horizontal wells drilled from land.

Sherritt International commenced oil and gas operations in Cuba during 1992 and has since become that country's largest foreign oil producer. The project had three distinct phases. Initial efforts were directed toward production enhancement in Cuba's main producing fields at Varadero, Boca de Jaruco, Perifericos and Pina. During this phase of the project an extensive technical database was created and analyzed by a multi-disciplinary study group to identify workover candidates. Almost 100 wells were worked over during the first four years of the project. Analysis of pre-existing data and workover results produced new insights into the structural complexities and reservoir characteristics of the fields. Technical and operational understanding gained during the workover phase led to successful infill and stepout drilling, mainly in the Varadero field. Finally, additional acreage between Havana and Varadero was added to Sherritt's existing land base where exploration drilling resulted in the discovery of the Yumuri/Seboruco oilfield in 1999.

Application of new geological models supported by modern structural logs and pre-stack depth migration seismic techniques have resulted in better technical understanding of Cuba's oilfields and a significant increase in oil production.