

Analysis of Well Logging Methods in Volcanic and Volcano Sedimentary Rocks from Piña Petroleum Field

Norma Rodriquez

Empresa Geofisica, Habana Cuba

Petrophysical, petrological and geophysical methods have been applied to prospecting and well logging for several petroleum fields in Cuba. The most common reservoir in these fields are carbonate rocks. However, the Pina field, in the Central region of the island, distinguishes itself by the good quality of the oil and the volcano sedimentary and volcanic character of the reservoirs.

These rocks have peculiar geophysical responses, which is why the study of these methods and the development of the

interpretation methods is very important. Integrated geological and geophysical information was necessary during the drilling of wells in the Pina field in order to evaluate the hydrocarbon potential. GEONUC code permits us to use different ways to solve questions about interpretation of well logging in the volcanic sedimentary rocks. This code gives us the opportunity to analyze complex methods.

Presence of Stratigraphic Traps in the Back Arc Basins of the Southern Shelf of Cuba

Rodobaldo Rodriguez, Rene Dominguez, and Sonia Touse

Geophysical Enterprise, 19 Street, No. 910, Vedado, La Habana, Cuba.

For the last ten years the southern shelf of Cuba has been the object of seismic investigations, mainly in the Ana Maria and Guacanayabo areas. More than 4000 km of seismic lines with 3000% have been shot. These seismic surveys have confirmed the following geological events:

- a) Presence of back arc extensional basins as a result of the ocean/ocean subduction. These basins have formed since Middle Cretaceous.
- b) Presence of sedimentary sequences with thickness changes of between 3.0–7.0 km.
- c) Predominance of an extensional regime since Middle Cretaceous with subsidence, accommodation and extension of the rocks.
- d) Development of stratigraphic traps, mainly associated with reef facies and slope fans of Late Cretaceous-Early

Tertiary. These traps can reach hundreds of square kilometers. They have very clear dynamic expression in the seismic section and usually form anomaly zones. Over these seismic anomalies some reverberation can be observed which could be related to hydrocarbon flows. The depth of the traps changes between 1.5–3.5 km. More than thirty have been localized.

- e) Probably a wrench tectonic system has been present in these basins since Middle Eocene.
- f) Oil and gas seepage as well as seal sequences are present in some wells.
- g) According to their origin and evolution they can be similar to the great oil basins of Venezuela and Colombia.