

Play Fairways Analysis in Barinas-Apure Basin

Santiago¹, Nubia¹, Escorcia¹, Landann¹, Oliveros¹, Rosalin¹, Bellizzi¹, Louise¹, Lara¹, José¹, Hernandez¹, Zorifrank¹, Marcano¹, Jose¹, Moya¹, Miguel¹, Parra¹, Kaolu¹, Peña¹, Yasmin y Rivas¹, Yanitza¹, Melissa²

¹ PDVSA Exploration

² Independent

Abstract

Barinas-Apure basin is a petroleum province with a long exploration history in Venezuela. It has over sixteen small isolated fields on production; but remains unexplored. Last regional study, from twelve years ago, defines three exploratory areas with 1000-7250 MMBN as Yet to find (YTF). This study shows a Play Fairway Analysis (PFA) based on a basin analysis and a petroleum system characterization, as a tool to propose new exploratory areas.

Seven plays were defined in depositional unit II, with the seal element as critical factor. Traps are mostly structural and expectations are 1949 MMBBL and 0.13 MMMCF. Depositional unit III is not a producer unit in the basin; it was identified one play where critical factors are reservoir and seal elements. Expectations are around 41 MMBBL. Depositional unit IV has Seal and reservoir best qualities northern. It is related with Barinas traditional area with expectancies of 436 MMBBL and 515 MMMCF in six plays. Depositional unit V is not a producer unit. Traps are mostly stratigraphic seals. Only one play was found with expectations of 22 MMBBL. Depositional unit VI has two structural plays with seal and charge elements as critical factors with expectations of 1286 MMBBL and 0.06 MMMCF.

Consequently, three exploratory areas were proposed: Apure Oriental, Barinas Central and Apure Occidental, which rank is based on resources and available data, and the best ways to develop it in this basin were established.

Barinas Apure Basin is volumetrically more significant than had been seen in the past. From this study Barinas Apure Basin resources consists of 17 *plays*. It is 123036 MMBBL of oil and 3099 MMMCF of gas determined to be discovered (YTF) and there are 30684 MMBBL of oil and 1719 MMMCF of gas average volume find on success (MSV) of oil and. Finally, expectations 3882 MMBBL oil and 610 MMMCF gas with a success rate between 10% and 30%.