

Maximum Flooding Surface Correlation SMI Davy Jones #1, #2, Baha #2 Block 557, Trident #2 Block 903, Alaminos Canyon to Balam 101 Well Bay of Campeche, Mexico with Reservoir Implications

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Abstract

Seismic, maximum flooding surfaces, marker species, high resolution biostratigraphy and well logs permitted correlation of the Miocene and Cretaceous sediments in the shallow shelf deep wells in South Marsh Island blocks 222 and 234 to the “Davy Jones” #1 and #2 in South Marsh Island Block 230 and 234 deep shallow shelf in the Gulf of Mexico. Sediments in the upper Miocene were deposited in ecozones 2 to 3, middle Miocene sediments were deposited in ecozone 4, mainly as Lowstand slope fan sediments.

MFS recognized in wells in South Marsh Island 222 and 224 were correlated on seismic and well logs to the McMoran “Davy Jones” wells SMI 230 #1. This well was placed at the well location on Fairfield seismic lines and projected to 35,000 feet. An interpretation of the Stratigraphy below the lower Miocene and salt determined the presence of Oligocene, Eocene and Paleocene Age in the 230 #1 and was correlated to upper part of “Davy Jones” SMI 234 #2 well. Additional Upper and Lower Cretaceous sediments were recognized in the lower part of the McMoran 234 #1 well.

The “Davy Jones” #1 reported a series of approximately 200 feet of pay sands in the reservoir section of Eocene Wilcox. The Davy Jones #2 penetrated a series of reservoir sands in the Tuscaloosa Formation that may correlated to The Tuscaloosa sands in on shore wells in Mississippi and Louisiana. Below these sands about 70 feet of Lower Cretaceous Albian carbonates were also penetrated.

The stratigraphic section in the Davy Jones #1 and #2 wells was correlated with 3rd order MFSs in the ultra deep water sediments in Shell Baja #2 well Block 557 and Unocal Trident #1 well, Block 903 Alaminos Canyon, offshore Gulf of Mexico and in turn to the Balam 101 well, Bay of Campeche, Mexico.

Of the 27 Maximum Flooding Surfaces recognized in the Balam 101, 15 were recognized in Shell Baha 557 #1, 14 Unocal 903 #1, 21 in “Davy Jones” #1 and 14 in Elpaso SMI 223.

Therefore upper to middle Miocene and Wilcox reservoir sands on the shallow and deep shelf in South Marsh Island can be correlated to equivalent age reservoir sands in the ultra deep waters in Alaminos Canyon and Bay of Campeche, Mexico during important regional lowstand events in the Gulf of Mexico.