Water Control in Basement Reservoir: A Case Study From High Water Cut Wells of Borholla, Assam Asset.

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Borholla field is located about 35 kms SSE of Jorhat town in the north eastern margin of Dhansiri valley along the Naga foothill. Structurally, Borholla field is on intensely faulted anticline. Oil is being produced from Sylhet, Kopili, basement and basal sandstone reservoirs. The field has two other reservoirs i.e. Tipam and Girujan, which are gas bearing. The first commercial discovery of hydrocarbons in the igneous / metamorphic rocks of India was made in this field.

The production from this reservoir peaked in 1988-89 at the rate of 159TPD (water cut 3.34%) with 04 producers. Subsequently rising trend of water cut in producing wells and transfer of wells to the other layers resulted in gradual decline of production. Rapid increase in water cut in the wells of Basement reservoir may be mainly due to non- existent of transition zone in the fracture systems. Further preferential movement of water in the fractured networks due to relatively low water viscosity compared to oil viscosity at reservoir condition may also contribute to increased water cuts. The reservoir has the aquifer support which is evident from the slow rate of pressure decline and high water cut. The water cut problem is severe in the wells which are structurally down and have large penetration in basement.