

**“Improved Oil Recovery Techniques – IOR – and their Role in
Boosting the Recovery Factor”**

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Gas Injection in an Oil Wet Reservoir in Bahrain Field

**ABDULLA MOHSEN Al Haddad
BAPCO, Bahrain**

Bahrain field, discovered in 1932, is a mature and structurally complicated field. The Mauddud reservoir is the major oil producing reservoir of the Bahrain field situated in an anticline feature of the middle cretaceous period. It is a highly under-saturated, low dip and preferentially oil wet reservoir. The initial reservoir pressure was 1256 psig and reached 950 psig after 6 years of production. To maintain reservoir pressure, crystal gas injection has been initiated in 1938. Initially, 0.2 PV rich Arab gas was injected from 1938 to 1973, when it was replaced by lean Khuff gas. Numerous low-relief faults place Mauddud reservoir in juxtaposition with overlying and underlying reservoirs. This provides additional production outlets for Mauddud fluids. Increased gas injection rate with aggressive work-over program to lower perforations and reduce free gas production, has resulted in maintaining the reservoir pressure, arresting the water encroachment and thus improving the oil production. The presentation discusses the gas injection history and benefits of gas injection on the recovery.