

# **PETROPHYSICAL INTERPRETATION OF SAWAN GAS FIELD, MIDDLE INDUS BASIN, PAKISTAN**



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of the requirement for the degree of MS in Geology.

**ALI IMTIAZ**

**Department of Earth and Environmental Sciences**

**Bahria University, Islamabad**

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## ABSTRACT

The foremost objective of this research work is to carry out petrophysical interpretation using wells Sawan-08 and Sawan-09. The probable reservoir zones have been marked at different depths in both the wells. Sawan-08 is divided into three zones as zone-01(3275-3305M), zone-02(3313-3319M) and zone-03(3321-3325M). Sawan-09 is divided into two zones as zone-01(3294-3303M) and zone-02(3306-3309M). The dominant lithology in the reservoir is sandstone whereas some abnormalities in GR log are also being observed which depicts the presence of radioactive mineral (K<sup>+</sup>ions) in sandstone. Lithostratigraphic correlation is being developed using wells Sawan-07, Sawan-08 and Sawan-09. Lithostratigraphic correlation depicts that almost all the formations are at equal depth with a change of few meters in the formation top. Interpolation method showed us that the zone of interest are deposited under aggradation pattern using GR curve. The petrophysical analysis of probable zones in Sawan-08 shows 13% average V<sub>shl</sub>, 2.3% average density, 10.3% effective porosity, 37% SW and 63% HS. The petrophysical analysis of Sawan-09 shows 22% average V<sub>shl</sub>, 2.3% average density, 11% effective porosity, 45% average SW and 55% average HS. On the basis of all these outlined petrophysical parameters it has been determined that Sawan Field has great potential to produce commercially viable hydrocarbons.

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