

**EVALUATION OF PETROPHYSICAL CHARACTERISTICS
AND DEPOSITIONAL ENVIRONMENT OF SAWAN GAS
FIELD, LOWER INDUS BASIN, PAKISTAN**



BY

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A thesis submitted to Bahria University, Islamabad in partial fulfillment of the requirement for the degree of MS Geology by

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ABSTRACT

Sawan gas field is located in Thar platform, eastern part of the lower Indus basin. It is considered one of the largest gas field of Pakistan with an expected ultimate recovery of more than 1 trillion cubic feet.

Petrophysics is relatively younger subject in the domain of geology, which is the study of the physical and chemical properties of rocks for the exploration of reservoirs of resources, including ore deposits and oil or natural gas reservoirs. This project involves the evaluation of the petrophysical characteristics and depositional environment of two of the Sawan wells namely, Sawan 8 and Sawan 9. This includes first the evaluation of the petrophysical characteristics which includes the determination of volume of shale, lithology, porosity, permeability, saturation of water, saturation of hydrocarbon, saturation of flushed zone, movable hydrocarbons, bulk volume of water, pore volume of hydrocarbon and finally the net pay thickness was calculated by using different techniques. After this, the depositional environment was determined with the help of GR log which came out to be shallow to deep marine environment.

The petrophysical interpretation shows that both the wells have the potential to produce the hydrocarbon economically.

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