

ABSTRACT

EVALUATION OF HH 2000HP VFD DRILLING RIG CAPACITY IN “US” FIELD “IR-01” WELL.

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Drilling operations generally always require an optimum rate of penetration without problems occurring that can increase drilling time and drilling costs. One of the factors that support the success of a drilling operation is the selection of the rig used.

If the load exceeds the capacity of the rig (underspec), a problem will occur which can lead to longer drilling times and less safe drilling. It is based on this background that the authors evaluate the capacity of the drilling rig in the “IR-01” Field “AS” Well. The rig used in the drilling operation at the “IR-01” Field “AS” Well was the HH-2000HP VFD rig. In evaluating rig capacity, there are several aspects that need to be reviewed. These aspects include aspects of Rig Specifications, Well Constriction (Well Profile) and Depth (TVD). From this aspect, three main systems can be calculated, namely the Hoisting System, the Rotating System, and the Circulating System. These three systems are embodiments of the capacity of a rig used in the drilling process.

From the calculation results in the “IR-01” Field “AS” well with a depth of 7402 ft MD obtained a lifting load of 288 HP, a rotating load of 514 HP and a circulating load of 1067 HP and the rig's own safety factor of 100 HP, so the total rig load is 1869 HP, while the capability of the HH-2000HP VFD rig itself is 2000 HP. Then the use of the HH-2000HP VFD rig in the “IR-01” Field “AS” well is not over capacity because the rig load used is 1869 HP, which is less than the actual rig capacity of 2000 HP which is indicated by the percentage of rig usage of 94.4% from 100%. So as a final conclusion, the rig used in the drilling process at the “IR-01” Field “AS” Well is good and safe to use.

Key Words: Rate of Penetration, Rig, Safety Factor