ABSTRACT

METHOD AND APPARATUS FOR AUTONOMOUS DOWNHOLE FLUID SELECTION WITH PATHWAY DEPENDENT RESISTANCE SYSTEM

An apparatus is described for controlling flow of fluid in a tubular positioned in a wellbore extending through a subterranean formation. A flow control system is placed in fluid communication with a main tubular. The flow control system has a flow ratio control system and a pathway dependent resistance system. The flow ratio control system has a first and second passageway, the production fluid flowing into the passageways with the ratio of fluid flow through the passageways related to the characteristic of the fluid flow. The pathway dependent resistance system includes a vortex chamber with a first and second inlet and an outlet, the first inlet of the pathway dependent resistance system in fluid communication with the first passageway of the fluid ratio control system and the second inlet in fluid communication with the second passageway of the fluid ratio control system.

Fig. 1