

Title (en)

CLOSED LOOP FLUID-HANDLING SYSTEM FOR USE DURING DRILLING OF WELLBORES

Title (de)

SYSTEM ZUR SPÜLUNGSaufBEREITUNG IM GESCHLOSSENEN KREISLAUF ZUM EINSATZ IN BRUNNENBOHRUNGEN

Title (fr)

SYSTEME DE MANUTENTION DE FLUIDES EN BOUCLE FERMEE UTILISE AU COURS DU FORAGE DE Puits

Publication

EP 0897454 A1 19990224 (EN)

Application

EP 97922650 A 19970505

Priority

- US 9707533 W 19970505
- US 64282896 A 19960503
- US 3075296 P 19961029

Abstract (en)

[origin: WO9742395A1] This invention provides a fluid-handling system for use in underbalanced drilling operations. The system includes a first vessel which acts as a four phase separator. The first vessel includes a first stage for separating solids. Oil and gas are separated at a second stage. A pressure sensor provides signals to a pressure controller, which modulates a gas flow valve coupled to the vessel for discharging gas from the first vessel. The pressure controller maintains the pressure in the first vessel at a predetermined value. An oil level sensor placed in the first vessel provides a signal to an oil level controller. The oil level controller modulates an oil flow valve coupled to the vessel to discharge oil from the first vessel into a second vessel. Water is discharged into a third vessel. Water from the third vessel is discharged via a water flow control valve, which is modulated by a level controller as a function of the water level in the third vessel. Any gas in the third vessel is discharged by modulating a gas control valve as a function of the pressure in the third vessel. In an alternative embodiment, a central control unit or circuit is utilized to control the operations of all the flow valves. During operations, a control unit maintains the pressure and the levels of the fluids in such vessels at their respective predetermined values according to programmed instructions. The fluid-handling system also controls the wellbore pressure as a function of downhole-measured parameters and the drilling fluid mix as a function of selected operating parameters.

IPC 1-7

E21B 21/06; **E21B 21/14**

IPC 8 full level

E21B 21/06 (2006.01); **E21B 21/14** (2006.01); **E21B 44/00** (2006.01); **E21B 21/00** (2006.01)

CPC (source: EP)

E21B 21/06 (2013.01); **E21B 21/085** (2020.05); **E21B 21/14** (2013.01); **E21B 44/00** (2013.01)

Citation (search report)

See references of WO 9742395A1

Designated contracting state (EPC)

BE DE FR GB IT NL

DOCDB simple family (publication)

WO 9742395 A1 19971113; AU 2826897 A 19971126; AU 723022 B2 20000817; CA 2252944 A1 19971113; CA 2252944 C 20060711; DE 69704158 D1 20010405; DE 69704158 T2 20010802; EP 0897454 A1 19990224; EP 0897454 B1 20010228; NO 315755 B1 20031020; NO 985098 D0 19981102; NO 985098 L 19981230

DOCDB simple family (application)

US 9707533 W 19970505; AU 2826897 A 19970505; CA 2252944 A 19970505; DE 69704158 T 19970505; EP 97922650 A 19970505; NO 985098 A 19981102