

Title (en)
Oil separation and pumping systems

Title (de)
Öltrenn- und Pumpsysteme

Title (fr)
Systèmes de séparation d'huile et de pompage

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Application
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Abstract (en)
The present invention relates to an arrangement for separating liquids of different densities in a well bore (34), particularly for producing a hydrocarbon-rich stream from a well (20) having a hydrocarbon producing zone (24) and spaced therefrom along the well (20) a disposal zone (26) for disposing a water-rich stream without transporting it to the surface, wherein the disposal zone (26) is an downhole disposal zone. The arrangement comprises a well bore (34) penetrating the hydrocarbon producing zone (24) and the disposal zone (26) in the earth (22), at least one packer (580) disposed in the well bore (34) between the producing zone (24) and the disposal zone (26), a tubing (36) extending from the surface and an assembly coupled to the tubing (36). The assembly comprises a motor (582), a pump (586) coupled to the motor (582) and being in fluid communication with the producing zone (24), and a multiple stage hydrocyclone having an inlet (596), a hydrocarbon-rich stream outlet in fluid communication with the tubing (36, 604) and a water-rich stream outlet in fluid communication with the disposal zone (26). The pump (586) is disposed in the assembly to direct the flow of liquid from the producing zone (24) into contact with the motor (582) and to the inlet of the separator. The assembly further comprises a first separator (590) having an inlet in fluid communication with the production zone (24), a hydrocarbon-rich stream outlet in fluid communication with the tubing (36, 604) extending from the surface and a water-rich stream outlet, and a second separator (592) having an inlet (612) in fluid communication with the water-rich stream outlet of the first separator (590), a hydrocarbon-rich stream outlet (594) in fluid communication with the pump inlet (588) and a water rich stream outlet in fluid communication with the disposal zone (26). <IMAGE>

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Cited by
US11913322B1; ITMI20102451A1; CN103338827A; GB2462783A; GB2462783B; US11180396B2; WO2015126997A3; WO2012089785A1; WO2008153407A1; US9353614B2; US9951598B2; WO2016161071A1; US10385673B2; US10947831B2

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