

Title (en)

Improving crude oil production from a layered oil reservoir

Title (de)

Verbesserung der Erdölförderung aus geschichteten Erdöllagerstätten

Title (fr)

Amélioration de la production de pétrole brut à partir d'un réservoir d'huile à couches

Publication

**EP 2228514 A1 20100915 (EN)**

Application

**EP 09154794 A 20090310**

Priority

EP 09154794 A 20090310

Abstract (en)

A method of improving the oil-productivity and recovery of a layered oil reservoir (1) having an upper layer (2) that is more permeable than a lower layer (3) of the oil reservoir (1), wherein: - a viscosified aqueous liquid is injected through an injection well (5) into the upper layer (2) - a non-aqueous fluid that is miscible with the oil is injected into the lower layer (3), - oil is recovered from the layered formation through a production well (10), - the viscosity of the aqueous liquid is so selected that the pressure gradient in the injected aqueous liquid in the upper section (2) is larger than or equal to the pressure gradient in the injected non-aqueous fluid in the lower section (3) to confine the no-aqueous fluid in the lower section (3), or the pressure gradient in the upper layer (2) enhances cross flow of the aqueous liquid into the lower layer (3) or the pressure gradient in the upper layer (2) is lower than that of the lower layer (3) to allow limited cross flow of the non-aqueous fluid into the upper layer (2), and - at least one of the injection and production wells (5,10) comprises a permeable fluid transfer section with a substantially horizontal orientation.

IPC 8 full level

**E21B 43/16** (2006.01); **E21B 43/30** (2006.01)

CPC (source: EP)

**E21B 43/16** (2013.01); **E21B 43/305** (2013.01)

Citation (applicant)

US 4715444 A 19871229 - MACALLISTER DONALD J [US], et al

Citation (search report)

- [XY] US 5211231 A 19930518 - SHU PAUL [US], et al
- [Y] US 4971150 A 19901120 - SANCHEZ J MICHAEL [US]
- [X] US 3269460 A 19660830 - HARDY WILLIAM C, et al
- [X] US 5314019 A 19940524 - HONARPOUR MEHDI M [US]
- [A] US 4375238 A 19830301 - PARSONS ROBERT W
- [DA] US 4715444 A 19871229 - MACALLISTER DONALD J [US], et al
- [A] US 3903967 A 19750909 - WOODWARD CHARLES D
- [A] US 2006180306 A1 20060817 - STONE HERBERT L [US]

Cited by

CN106703765A; CN105247165A; CN104712295A; CN104929597A; WO2014194031A1; WO2020165618A1; US11713660B2; EP2239415A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)

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DOCDB simple family (publication)

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