Title (en)

METHOD FOR DETERMINING, BY STRATA, THE RESERVE QUALITY OF AN OIL WELL

Title (de)

VERFAHREN ZUR SCHICHTWEISEN BESTIMMUNG DER VORRATSQUALITÄT EINES ÖLBOHRLOCHS

Title (fr)

PROCEDE POUR DETERMINER, PAR STRATES, LA QUALITE DE RESERVE D' UN PUITS DE PETROLE

Publication

EP 1506344 B1 20110323 (FR)

Application

EP 03752836 A 20030519

Priority

• FR 0301507 W 20030519
• FR 0206189 A 20020522

Abstract (en)

[origin: WO03098000A1] The invention concerns a method for evaluating the hydraulic head of a porous stratum delimited by two sides zlow and zhigh which consists in generating a periodic modulation of the flow rate of the well, in lowering into the well and activating for some periods at the depth zlow a measuring production logging tool probe, extracting, from the measurements obtained the amplitude DeltaQlow of the sinusoidal component of the flow rate modulation related to one of the imposed periods T, the amplitude of DeltaPlow of sinusoidal component of the pressure modulation related to the same period T, and the phase delay of the pressure sinusoidal wave relative to that of the flow rate Philow, determining the response Rlow = DeltaPlow/DeltaQlow e-<iPhilow>, raising the probe up to the elevation zhigh, and determining the complex response Rhigh = DeltaPhigh/DeltaQhigh e-<iPhihigh>, calculating the complex response Rstratum = Rhigh°Rlow/Rlow Rhigh, in assuming a physical model for the strata by numerical inversion of the mathematical formula providing the theoretical complex response, determining the hydraulic characteristics of the stratum defined by the measured response Rstratum, calculating the productivity index of the well IPstratum related to the stratum concerned and deducing the average reservoir pressure PG in the stratum based on the formula PG = PF + Qstratum/IP.

IPC 8 full level

E21B 49/00 (2006.01)

CPC (source: EP US)

E21B 49/008 (2013.01 - EP US)

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

WO 03098000 A1 20031127; AU 2003258765 A1 20031202; CA 2487090 A1 20031127; CA 2487090 C 20101019; CN 100519987 C 20090729; CN 1666009 A 20050907; DE 60336466 D1 20110505; EP 1506344 A1 20050216; EP 1506344 B1 20110323; FR 2840014 A1 20031128; FR 2840014 A3 20031128; US 2006129321 A1 20060615; US 7257491 B2 20070814

DOCDB simple family (application)

FR 0301507 W 20030519; AU 2003258765 A 20030519; CA 2487090 A 20030519; CN 03816134 A 20030519; DE 60336466 T 20030519; EP 03752836 A 20030519; FR 0206189 A 20020522; US 51539803 A 20030519