

Title (en)

Method of estimating the volume ratio of gas to oil (GOR) in the borehole fluids while drilling

Title (de)

Verfahren zur Abschätzung des Volumenverhältnisses von Gas zum Öl in den Bohrlochflüssigkeiten während des Bohrens

Title (fr)

Méthode pour estimer le rapport volumique du gaz à l'huile (GOR) dans les fluides d'un puits en cours de forage

Publication

EP 1394357 B1 20050601 (FR)

Application

EP 03291857 A 20030725

Priority

FR 0210659 A 20020828

Abstract (en)

[origin: EP1394357A1] The volume of gas (Vg) in the drilling fluids is the slope of a ratio measured between the gas volume produced and the corresponding volume of rock drilled. The volume of oil (Vo) is determined by measuring the proportion of organic carbon (TOC) in the drilled rock. The volume ratio (GOR) is the ratio between the determined volumes of gas and oil. The volume of oil (Vo) is determined by measuring the amount of organic carbon (TOC) in the drilled rock taking into account physical characteristics of the drilled rock and of the oil in the surface conditions. The ratio (SPI) of a volume of gas produced at the surface to the same volume of rock drilled is evaluated taking into consideration the concentration of gas in the drilling fluids, the drilling fluid flows in circulation, the rate of penetration of the drilling tool and the diameter of the hole drilled. The volume ratio (GOR) is determined by the formula $GOR = SPI / ((TOC/100) \cdot k \cdot (\rho_{\text{hor}}/\rho_{\text{hoo}}))$ where ρ_{hoo} is the density of the liquid hydrocarbon at the surface (generally estimated at 0.8), ρ_{hor} is the estimated density of the rock, ϕ is the porosity of the rock and k is the ratio between % weight of oil and carbon in the rock drilled.

IPC 1-7

E21B 49/08

IPC 8 full level

E21B 49/08 (2006.01)

CPC (source: EP US)

E21B 49/08 (2013.01 - EP US)

Cited by

CN117571582A; CN105804740A

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

EP 1394357 A1 20040303; **EP 1394357 B1 20050601**; BR 0303434 A 20040914; CA 2438198 A1 20040228; CA 2438198 C 20101012; DE 60300760 D1 20050707; DE 60300760 T2 20051103; FR 2843996 A1 20040305; FR 2843996 B1 20041015; NO 20033808 D0 20030827; NO 324060 B1 20070806; US 6950750 B1 20050927

DOCDB simple family (application)

EP 03291857 A 20030725; BR 0303434 A 20030828; CA 2438198 A 20030825; DE 60300760 T 20030725; FR 0210659 A 20020828; NO 20033808 A 20030827; US 64688803 A 20030825