

Title (en)

NON-HYDRAULIC FRACTURING AND COLD FOAM PROPPANT DELIVERY SYSTEMS, METHODS, AND PROCESSES

Title (de)

SYSTEME, VERFAHREN UND PROZESSE FÜR NICHT-HYDRAULISCHE FRAKTURIERUNG UND AUSGABE EINES KALTSCHAUMSTÜTZMITTELS

Title (fr)

SYSTÈMES, PROCÉDÉS ET PROCESSUS DE FRACTURATION NON-HYDRAULIQUE ET DE DISTRIBUTION D'AGENT DE SOUTÈNEMENT À MOUSSE FROIDE

Publication

EP 2984285 A4 20160629 (EN)

Application

EP 14782881 A 20140325

Priority

- US 201313858780 A 20130408
- US 2014031679 W 20140325

Abstract (en)

[origin: WO2014168751A2] Methods and systems of fracturing subterranean formations are provided comprising pumping metacritical phase natural gas into a subterranean formation to create or extend one or more fissures in the formation. Methods and systems may further comprise maintaining or increasing pressure of the metacritical phase natural gas in the formation by pumping more metacritical phase natural gas into the fissures to hold the fissures open. Methods and systems may further comprise delivering a proppant into the subterranean formation. Disclosed methods and systems may be used to extract hydrocarbons from subterranean formations without the use of liquids. Methods and systems of delivering proppant comprise providing a non-aqueous liquid, adding a surfactant to the non-aqueous liquid, adding a proppant to the non-aqueous liquid to form a non-aqueous liquid, surfactant and proppant stream, pumping to pressure the non-aqueous liquid, surfactant and proppant stream, using pressurized natural gas to energize the non-aqueous liquid, surfactant and proppant stream, and delivering the energized non-aqueous liquid, surfactant and proppant stream into a subterranean formation. Methods of recovering proppant delivery liquid are also provided.

IPC 8 full level

E21B 43/267 (2006.01); **C09K 8/60** (2006.01); **C09K 8/66** (2006.01); **C09K 8/70** (2006.01)

CPC (source: EP)

C09K 8/602 (2013.01); **C09K 8/665** (2013.01); **C09K 8/703** (2013.01); **E21B 36/001** (2013.01); **E21B 43/267** (2013.01)

Citation (search report)

- [Y] US 3980136 A 19760914 - PLUMMER RAY A, et al
- [Y] CA 1122896 B 19820504 - CANADIAN FRACMASTER LTD [CA]
- See references of WO 2014168751A2

Designated contracting state (EPC)

AL 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 RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2014168751 A2 20141016; **WO 2014168751 A3 20141204**; AR 095817 A1 20151111; AU 2014251274 A1 20151105; AU 2014251274 B2 20171221; BR 112015025644 A2 20170718; CA 2908618 A1 20141016; CA 2908618 C 20171121; CN 105102758 A 20151125; EP 2984285 A2 20160217; EP 2984285 A4 20160629; MX 2015013793 A 20160216; ZA 201507436 B 20170830

DOCDB simple family (application)

US 2014031679 W 20140325; AR P140101532 A 20140408; AU 2014251274 A 20140325; BR 112015025644 A 20140325; CA 2908618 A 20140325; CN 201480020222 A 20140325; EP 14782881 A 20140325; MX 2015013793 A 20140325; ZA 201507436 A 20151007