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- (71) Applicant (for AL, AU, AZ, BG, CO, CZ, DE, DK, GR, HU, ID, IE, IL, IT, KR, KZ, LT, MX, NO, NZ, OM, PL, RO, RU, SI, SK, TM, TN, TR, TT, UA, UZ, ZA only): **SCHLUMBERGER TECHNOLOGY B.V.** [NL/NL]; Parkstraat 83-89, NL-2514 JG The Hague (NL).
- (71) Applicant (for FR only): **SERVICES PETROLIERS SCHLUMBERGER** [FR/FR]; 42 rue Saint-Dominique, F-75007 Paris (FR).
- (71) Applicant (for CA only): **SCHLUMBERGER CANADA LIMITED** [CA/CA]; 525-3rd Avenue S.W., Calgary, Alberta T2P 0G4 (CA).
- (71) Applicant (for GB, JP, NL only): **SCHLUMBERGER HOLDINGS LIMITED**; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for all designated States except AL, AU, AZ, BG, CA, CO, CZ, DE, DK, FR, GB, GR, HU, ID, IE, IL, IT, JP, KR, KZ, LT, MX, NL, NO, NZ, OM, PL, RO, RU, SI, SK, TM, TN, TR, TT, UA, UZ, ZA): **PRAD RESEARCH AND DEVELOPMENT LIMITED**; P.O. Box 71, Craigmuir Chambers, Road Town, Torola (VG).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WU, Peter T.** [US/US]; 3023 Cotter Lake Circle, Missouri City, Texas 77459 (US). **DUMONT, Alain** [FR/JP]; 3-13-1 Kami-asao, Asao-ku, Kawasaki-shi, Kanagawa-ken 215-0021 (JP). **CAMPANAC, Pierre, H.** [FR/US]; 4730 Stoney Point Court, Sugar Land, Texas 77479 (US). **JOHNSON, David** [US/US]; 32 Hall Avenue Somerville, MA 02144 (US).
- (74) Agent: **MATSUDA, Kiichiro**; Schlumberger K.K., 2-2-1 Fuchinobe, Sagamihara-shi, Kanagawa-ken, 229-0006 (JP).
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(54) Title: METHOD FOR PERMEABLE ZONE DETECTION

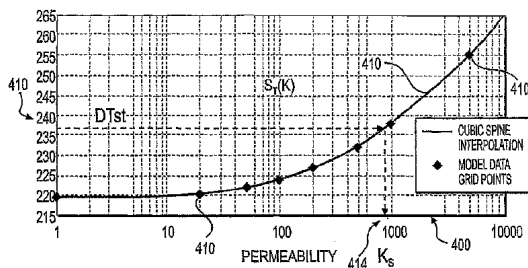


FIG. 4A

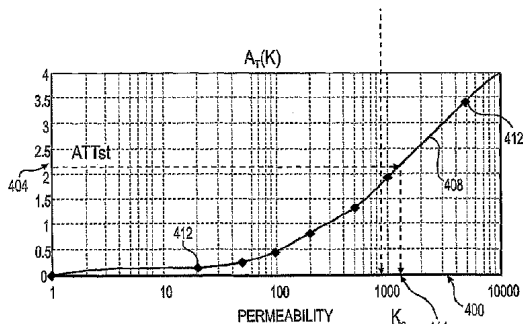


FIG. 4B

(57) Abstract: A method for estimating formation permeability from measured sonic wave Stoneley attributes and particularly the Stoneley attributes of slowness (DTst) and attenuation (ATTst), taking into consideration the existence of a heavy walled drill collar at the end of the drill string and the relative lack of borehole mud cake during a drilling operation. In the subject LWD application a real-time qualitative indication for fracture and permeable zones is estimated from Stoneley measurements. This information is useful to a driller to make important timely decisions about drilling and completion programs.



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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2007/001746 A1 (EXXONMOBIL UPSTREAM RES CO [US]; WU XIANYUN [US]; YIN HEZHU [US]) 4 January 2007 (2007-01-04) * abstract; claims 1-3; figure 5 paragraphs [0002], [0004], [0005], [0012], [0050] - [0052], [0126]	1-4,6,7, 9,10,13
Y	US 5 784 333 A (TANG XIAOMING [US] ET AL) 21 July 1998 (1998-07-21) * abstract; figure 6 column 1, line 9 - column 2, line 53 column 11, line 1 - column 12, line 36 ----- -/--	1-4,6,7, 9,10,13

 Further documents are listed in the continuation of Box C. See patent family annex.

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European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040,  
Fax: (+31-70) 340-3016

Authorized officer

Vollmer, Thorsten

## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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