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Declarations under Rule 4.17:

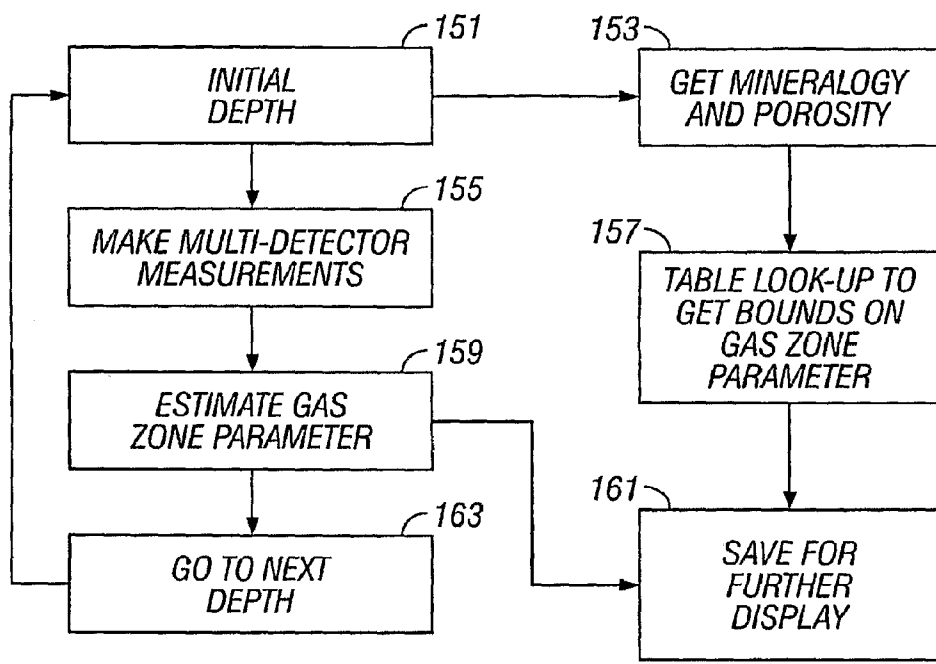
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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10 April 2008

(54) Title: MEASUREMENT OF WATER-OIL SATURATION USING PULSED NEUTRON INSTRUMENTATION



(57) Abstract: A pulsed neutron tool with three or more detectors is used for making measurements inside casing. The ratio of capture gamma ray counts for a near and extra-long spaced detector are used to determine oil saturation.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/13609

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G01V 5/10; G01V 5/00 (2007.10)

USPC - 250/269.6

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

USPC: 250/269.6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC: 250 (all subclasses), US 2007/0023626 - see keywords below

Google Internet, Answers.com - see keywords below

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

Electronic Databases Searched: PubWEST(USPT,PGPB,EPAB,JPAB); USPTO, Google, Answers.com

Search Terms: Fluid zone parameter, earth, formation, water, oil, irradiate, nuclei, gamma, borehole, cased, saturation, detector, neutron, formation mineralogy, fluid density, formation porosity, diameter, equation of state, Monte Carlo

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X - Y	US 2004/0222368 A1 (ODOM et al.) 11 November 2004 (11.11.2004); para [0008]-[0019], [0031], [0034], [0037]-[0038], [0058], [0062], [0068]-[0070] and [0073]; See Figs. 2 and 6	1-8 and 10 ----- 9 and 11-23
Y	US 2006/0061364 A1 (BANNING et al.) 23 March 2006 (23.03.2006); para [0011]-[0016], [0029], [0038] and [0039]	9 and 11-23
A	US 2003/0178560 A1 (ODOM et al.) 25 September 2003 (25.09.2003); entire document	1-23
A	US 2005/0067563 A1 (GILCHRIST et al.) 31 March 2005 (31.03.2005); entire document	1-23

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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