PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GB2018/052658	18.09.2018	26.09.2017

International Patent Classification (IPC) or both national classification and IPC
INV. E21B29/06 E21B29/08 E21B34/06 E21B43/17 E21B7/04

Applicant
METROL TECHNOLOGY LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Patrascu, Bogdan Telephone No. +49 89 2399-0

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/GB2018/052658

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-25
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-25
Industrial applicability (IA)	Yes:	Claims	1-25
	No:	Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

1 **Re Item V**

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.1 Reference is made to the following documents:

D1 US 2015/240592 A1 (ROSS SHAUN COMPTON [GB] ET AL) 27 August 2015 (2015-08-27)

D2 WO 2016/057014 A1 (HALLIBURTON ENERGY SERVICES INC [US]) 14 April 2016 (2016-04-14)

D3 Mikolaj Ralowski: "Design of a hypothetical relief well for a shallow reservoir, possible challenges.",
, 30 May 2016 (2016-05-30), pages 15-32, XP055528911,
Stavanger
Retrieved from the Internet:
URL:https://brage.bibsys.no/xmlui/bitstream/handle/11250/2409333/Ralowski_Mikolaj.pdf
[retrieved on 2018-11-30]

D2 WO 2011/067372 A1 (WELLTEC AS [DK]; HALLUNDBAEK JOERGEN [DK]; HAZEL POUL [GB]) 9 June 2011 (2011-06-09)

D5 WO 2017/027978 A1 (KOBOLD SERVICES INC [CA]) 23 February 2017 (2017-02-23)

D6 WO 02/084067 A1 (NORTHLAND ENERGY CORP [CA]) 24 October 2002 (2002-10-24)

1.2 The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 1 does not involve an inventive step.

1.2.1 D1 may be regarded as being the prior art closest to the subject-matter of claim 1, and discloses:

A method of controlling a well in a geological structure, the well comprising:
- a first casing string (12c, fig.1, par.0114) and a second casing string, the second casing string (12b, fig.1, par.0114) at least partially inside the first casing string (see fig.1);

- the first casing string and the second casing string defining a first inter-casing annulus therebetween, the second casing string defining a second casing bore therewith in (clear from fig.1, par.0114); and
- a primary fluid flow control device in the second casing string to provide fluid communication between the first inter-casing annulus and the second casing bore (401, fig.4a to fig.4c - as it can be understood from par.0126-par.0129, the casing valve sub 401 can be used in any casing from the well in order to equalize the pressure between an inner and outer annuli);

the method comprising the steps of:
- opening the primary fluid flow control device and directing the fluid between the first inter-casing annulus and the second casing bore (par.0126-par.0129)

1.2.2 The subject-matter of claim 1 therefore differs from this known D1 in that

- drilling a borehole through at least a portion of the geological structure to reach the well, thus creating a relief well;
- creating a fluid communication path through the first casing string to provide fluid communication between the relief well and the first inter-casing annulus of the well;
introducing a fluid into the relief well and then into the first inter-casing annulus;

1.2.3 The problem to be solved by the present invention may therefore be regarded as to provide a method that mitigates the effect of a blowout of a well.

1.2.4 The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT). D2 discloses a system and method for establishing hydraulic communication between a relief well and a target well, wherein the relief well intersects with the target well at an intersection point and the relief well includes a distal portion of the relief well that is deviated and intersects the first wellbore from below the intersection point.

Features:

- drilling a borehole through at least a portion of the geological structure to reach the well, thus creating a relief well (page 3, l.26-33, page 4, l.1-2, fig.1);
- creating a fluid communication path through the first casing string to provide fluid communication between the relief well and the first inter-casing annulus of the well;
introducing a fluid into the relief well and then into the first inter-casing annulus (page 3, l.26-33, page 4, l.1-17, fig.1);

are described in document D2 as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal option to include these features in the method described in D1 in order to solve the problem posed.

1.3 Dependent claims 2-25 do not contain any features which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of novelty and/or inventive step, see

1.3.1 claim 2: the subject-matter is new but it doesn't involve an inventive step, see D2 (fig.1)

1.3.2 claim 4: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0019)

1.3.3 claim 5: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0019, par.0125-par.0126)

1.3.4 claim 6: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0025)

1.3.5 claim 7: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0019)

1.3.6 claims 3, 8-10, 15-17, 20-25: the subject-matter is new but it doesn't involve an inventive step as they present trivial options that would be obvious for the man skilled in the art when considering D1 in combination with D2.

1.3.7 claims 11, 12: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0048)

1.3.8 claims 13, 18, 19: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0036-0038)

1.3.9 claim 14: the subject-matter is new but it doesn't involve an inventive step, see D1 (par.0025)

2 **Re Item VII**

Certain defects in the international application

2.1 Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

2.2 "Incorporation by reference" is possible only in the condition given under GL, F-III 8.. As the present application does not fulfil said conditions any statement that a given document is "incorporated by reference" should be deleted from par 0001 of the application.

2.3 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

2.4 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D1, D2 and D2 is not mentioned in the description, nor are these documents identified therein.