



SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 17 75 39 21

Classification of the application (IPC):
E21B 43/11, E21B 43/116, E21B 43/117, E21B 43/25

Technical fields searched (IPC):
E21B

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
Y	US 2013192829 A1 (FADUL JAVIER [US] ET AL) 01 August 2013 (2013-08-01) * paragraphs [0039], [0057] *	1-15
Y	WO 2016022111 A1 (HALLIBURTON ENERGY SERVICES INC [US]) 11 February 2016 (2016-02-11) * page 9, line 22 - page 10, line 12 *	1-15
Y	US 2005061506 A1 (GROVE BRENDEN M [US] ET AL) 24 March 2005 (2005-03-24) * paragraphs [0042] - [0047] *	1-15
Y	US 4976318 A (MOHAUPT HENRY H [US]) 11 December 1990 (1990-12-11) * the whole document *	1-15

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 27 September 2019	Examiner Manolache, Iustin
---------------------------	---	-------------------------------

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:
EP 17 75 39 21

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 27-09-2019
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 2013192829	A1	01-08-2013	US	2013192829 A1	01-08-2013
			US	2014083764 A1	27-03-2014
WO 2016022111	A1	11-02-2016	US	2017175500 A1	22-06-2017
			WO	2016022111 A1	11-02-2016
US 2005061506	A1	24-03-2005	DE	102004048615 A1	02-06-2005
			US	2005061506 A1	24-03-2005
			US	2007079960 A1	12-04-2007
US 4976318	A	11-12-1990	CA	2030103 A1	02-06-1991
			US	4976318 A	11-12-1990