PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4879940

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PHILIP D. NGUYEN	06/29/2015
DIPTI SINGH	07/26/2015
PRASHANT D. CHOPADE	06/29/2015
TRAVIS HOPE LARSEN	06/29/2015

RECEIVING PARTY DATA

Name:	HALLIBURTON ENERGY SERVICES, INC.	
Street Address: 3000 N. SAM HOUSTON PARKWAY E.		
City:	HOUSTON	
State/Country: TEXAS		
Postal Code:	77032-3219	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15753905

CORRESPONDENCE DATA

Fax Number: (949)851-9348

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 949-851-0633

Email: smanriquez@mwe.com, mweipdocket@mwe.com,

HalliburtonUSPTOReporting@mwe.com

Correspondent Name: MCDERMOTT WILL & EMERY LLP

Address Line 1: 4 PARK PLAZA, SUITE 1700

Address Line 4: IRVINE, CALIFORNIA 92614-2559

ATTORNEY DOCKET NUMBER:	098273-2229
NAME OF SUBMITTER:	MARK J. ITRI, REG. NO. 36,171
SIGNATURE:	/Mark J. ltri/
DATE SIGNED:	03/22/2018

Total Attachments: 8

source=098273-2229_Assignment#page1.tif source=098273-2229 Assignment#page2.tif

> **PATENT** REEL: 045321 FRAME: 0739 504833203



PATENT REEL: 045321 FRAME: 0740

DECLARATION AND ASSIGNMENT

As	e below named inventor, I hereby declare that:	
Th	declaration is directed to:	
\boxtimes	The attached application to be filed as a United States application of) [
	PCT international application, or	
	United States application or PCT international application number	<u>}</u> }
	filed on; and,	
entitled	ENHANCING COMPLEX FRACTURE NETWORKS IN SUBTERRANEA	N
FORMAT:	NS." Regarding that application, I declare the following:	

- The above-identified application was made, or authorized to be made, by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219 (hereinafter "Assignee") is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, We, by these presents do sell, assign and transfer and convey unto Assignee, its successors and assigns, the full and exclusive right, for the United States of America and its territorial possessions and for any and all foreign countries, in and to the said invention, described in the Patent Application identified above, and any national phase, divisional, continuing, continuation-in-part, or reissue application based on the present application preparatory to obtaining Letters Patent of the United States therefore; said invention, application and any and all Letters Patent issuing there from to be held and enjoyed by Assignee, for its own use and benefit, and for its legal representatives, successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me and had this assignment and sale not been made.

And I do further agree to sign all papers, make all rightful oaths and do all requisite acts for the filing of any disclaimer or for the filing and assignment of any divisional, continuing or reissue application or applications for patent based on the present application, as well as for any other U.S. or foreign application for patent which relates to the said invention.

And I do further agree to communicate to Assignee, its successors, assign or other legal representatives, such facts relating to the invention disclosed in the present application or Letters Patent issuing thereon as may be known to me, and to testify as to such facts in any interference or other litigation.

Executed this 29 to day of Time , 2015

PHILIP D. NGBYEN

STATE OF TOXAGE

COUNTY OF TIME A COUNTY OF TIME A

Before me personally appeared said PHILIP D. NGUYEN and acknowledged the foregoing instrument to be a free act and deed this $\frac{29}{100}$ day of $\frac{1}{1000}$ of . 2015.

ALEX WEBSTER

Notary Public, State of Texas

My Commission Expires

January 04, 2018

Auf Williams

DECLARATION AND ASSIGNMENT

As	the below named inventor, I hereby declare that:
Th	is declaration is directed to:
\boxtimes	The attached application to be filed as a United States application or
	PCT international application, or
	United States application or PCT international application number
	filed on; and,
entitled	"ENHANCING COMPLEX FRACTURE NETWORKS IN SUBTERRANEAN
FORMATI	ONS." Regarding that application, I declare the following:

- The above-identified application was made, or authorized to be made, by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219 (hereinafter "Assignee") is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, We, by these presents do sell, assign and transfer and convey unto Assignee, its successors and assigns, the full and exclusive right, for the United States of America and its territorial possessions and for any and all foreign countries, in and to the said invention, described in the Patent Application identified above, and any national phase, divisional, continuing, continuation-in-part, or reissue application based on the present application preparatory to obtaining Letters Patent of the United States therefore; said invention, application and any and all Letters Patent issuing there from to be held and enjoyed by Assignee, for its own use and benefit, and for its legal representatives, successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me and had this assignment and sale not been made.

And I do further agree to sign all papers, make all rightful oaths and do all requisite acts for the filing of any disclaimer or for the filing and assignment of any divisional, continuing or reissue application or applications for patent based on the present application, as well as for any other U.S. or foreign application for patent which relates to the said invention.

And I do further agree to communicate to Assignee, its successors, assign or other legal representatives, such facts relating to the invention disclosed in the present application or Letters Patent issuing thereon as may be known to me, and to testify as to such facts in any interference or other litigation.

Executed this 2614	day of	Tuly	, 2015	
		3/W	pin	
	Ĭ	DIPTÍ SÍNGH	7 7	
STATE OF TEXES)			
COUNTY OF Harris) }			

Before me personally appeared said DIPTI SINGH and acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing instrument to be a free act and deed this acknowledged the foregoing the fore

Seal

ALEX WEBSTER

Nolary Public, State of Texas

My Commission Expires

January 04, 2016

14 Malesta (Notary)

DECLARATION AND ASSIGNMENT

As	the below named inventor, I hereby declare that:
Th	is declaration is directed to:
\boxtimes	The attached application to be filed as a United States application or
	PCT international application, or
	United States application or PCT international application number
	filed on; and,
entitled	"ENHANCING COMPLEX FRACTURE NETWORKS IN SUBTERRANEAN
FORMATI	ONS." Regarding that application, I declare the following:

- The above-identified application was made, or authorized to be made, by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219 (hereinafter "Assignee") is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, We, by these presents do sell, assign and transfer and convey unto Assignee, its successors and assigns, the full and exclusive right, for the United States of America and its territorial possessions and for any and all foreign countries, in and to the said invention, described in the Patent Application identified above, and any national phase, divisional, continuing, continuation-in-part, or reissue application based on the present application preparatory to obtaining Letters Patent of the United States therefore; said invention, application and any and all Letters Patent issuing there from to be held and enjoyed by Assignee, for its own use and benefit, and for its legal representatives, successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me and had this assignment and sale not been made.

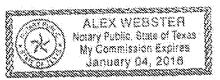
And I do further agree to sign all papers, make all rightful oaths and do all requisite acts for the filing of any disclaimer or for the filing and assignment of any divisional, continuing or reissue application or applications for patent based on the present application, as well as for any other U.S. or foreign application for patent which relates to the said invention.

And I do further agree to communicate to Assignee, its successors, assign or other legal representatives, such facts relating to the invention disclosed in the present application or Letters Patent issuing thereon as may be known to me, and to testify as to such facts in any interference or other litigation.

Executed this	29.8	\ _day of	Three	, 2015
			A COSS	
		PR	ASHAÑ D. CHOP	ADE
STATE OF	Texas			
COUNTY OF	Warnes	}		

Before me personally appeared said PRASHANT D. CHOPADE and acknowledged the foregoing instrument to be a free act and deed this 20 day of 5000 , 2015.

Seal



A NUXUE
(Notary)

DECLARATION AND ASSIGNMENT

As	the below named inventor, I hereby declare that:
Th	is declaration is directed to:
\boxtimes	The attached application to be filed as a United States application or
	PCT international application, or
	United States application or PCT international application number
	filed on; and,
entitled	"ENHANCING COMPLEX FRACTURE NETWORKS IN SUBTERRANEAN
FORMATI	ONS." Regarding that application, I declare the following:

- The above-identified application was made, or authorized to be made, by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Moreover, Whereas, HALLIBURTON ENERGY SERVICES, INC., a Delaware Corporation, having a place of business at 3000 N. Sam Houston Parkway E., Houston, TX 77032-3219 (hereinafter "Assignee") is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, We, by these presents do sell, assign and transfer and convey unto Assignee, its successors and assigns, the full and exclusive right, for the United States of America and its territorial possessions and for any and all foreign countries, in and to the said invention, described in the Patent Application identified above, and any national phase, divisional, continuing, continuation-in-part, or reissue application based on the present application preparatory to obtaining Letters Patent of the United States therefore; said invention, application and any and all Letters Patent issuing there from to be held and enjoyed by Assignee, for its own use and benefit, and for its legal representatives, successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me and had this assignment and sale not been made.

And I do further agree to sign all papers, make all rightful oaths and do all requisite acts for the filing of any disclaimer or for the filing and assignment of any divisional, continuing or reissue application or applications for patent based on the present application, as well as for any other U.S. or foreign application for patent which relates to the said invention.

And I do further agree to communicate to Assignee, its successors, assign or other legal representatives, such facts relating to the invention disclosed in the present application or Letters Patent issuing thereon as may be known to me, and to testify as to such facts in any interference or other litigation.

Executed this 29th	day of
	Marian Marian
	TRAVIS HOPE LARSEN
STATE OF TEXAS	\(\frac{1}{2}\)
COUNTY OF Ulazala	}

Before me personally appeared said TRAVIS HOPE LARSEN and acknowledged the foregoing instrument to be a free act and deed this 20 day of $\sqrt{100}$, 2015.

ALEX WEBSTER
Notisty Public, State of Texas
My Commission Expires
January 04, 2018

AG DUUKG (Notary)

2 of 2

RECORDED: 03/22/2018

and the second