

## PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT4556508

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MARK CHARLES PENN	07/21/2017
ANTHONY PINK	08/16/2017
JOSEPH KYLE SMITH	06/30/2017
REZA BANIRAZI-MOTLAGH	06/30/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	NATIONAL OILWELL VARCO, L.P.
<b>Street Address:</b>	7909 PARKWOOD CIRCLE DRIVE
<b>City:</b>	HOUSTON
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77036
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15540593
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
<b>Phone:</b>	713-632-1400
<b>Email:</b>	jennifer.tilley@hoganlovells.com
<b>Correspondent Name:</b>	HOGAN LOVELLS US LLP
<b>Address Line 1:</b>	609 MAIN STREET
<b>Address Line 2:</b>	SUITE 4200
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<b>ATTORNEY DOCKET NUMBER:</b>	042993.001006
<b>NAME OF SUBMITTER:</b>	JEFFREY S. WHITTLE
<b>SIGNATURE:</b>	/Jeffrey S. Whittle/
<b>DATE SIGNED:</b>	08/18/2017
<b>Total Attachments: 7</b>	
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## ASSIGNMENT

WHEREAS, WE, Mark Charles PENN, Anthony PINK and Joseph Kyle SMITH, citizens of the United States of America, and Reza BANIRAZI-MOTLAGH, citizen of Iran, are the sole inventors of a SYSTEMS AND METHODS TO CONTROL DIRECTIONAL DRILLING FOR HYDROCARBON WELLS for which an application for United States Letters Patent No. **15/540,593** was filed on **June 29, 2017**, which claims priority to International Application No. PCT/US2015/067865, filed December 29, 2015, titled "SYSTEMS AND METHODS TO CONTROL DIRECTIONAL DRILLING FOR HYDROCARBON WELLS" which is a continuation-in-part of U.S. Patent Application No. 14/627,581, filed February 20, 2015, titled "DRILLING DIRECT CONTROL USER INTERFACE," which claims priority to U.S. Patent Provisional Application No. 62/097,644, filed December 30, 2014, titled "DRILLING DIRECT CONTROL SYSTEM;" and

WHEREAS, National Oilwell Varco, L.P., a limited partnership, with a business address of 7909 Parkwood Circle Drive, Houston, Texas 77036, hereafter "Assignee," is desirous of acquiring the entire right, title, and interests in and to the aforesaid inventions throughout the world, and all right, title, and interests in, to and under any and all Letters Patent of the United States and all other countries throughout the world.

NOW, THEREFORE, be it known that, for good and valuable consideration, the adequacy, receipt, and legal sufficiency of which from Assignee are each hereby acknowledged, We, as Assignors, sell, assign, transfer, and set over to Assignee, all right, title, and interests in and to the said inventions throughout the world, and said applications for U.S. Letters Patent, and any and all additional provisionals, non-provisionals, divisions, continuations, continuations-in-part, reissues, extensions, reexaminations, post-grant proceedings, derivations, or other inter-parties review proceedings thereof, and any and all Letters Patent of the United States and foreign countries which may be granted therefor, the same to be held and enjoyed by them for their own use and benefit, and for the use and benefit of their successors, assigns, or other legal representatives, to the end of the term or terms for which said Letters Patent of the United States or foreign countries are or may be granted, reexamined, or reissued, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

And We hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States and any foreign patent offices on said inventions or resulting from said applications and from any and all additional provisionals, non-provisionals, divisions, continuations, continuations-in-part, reissues, extensions, reexaminations, post-grant proceedings, derivations, or other inter-parties review proceedings thereof, to Assignee, as assignee of our entire interests, and hereby covenant that we have the full right to convey the entire interests herein assigned, and that we have not executed and will not execute any agreement in conflict herewith.

And We further hereby covenant and agree that we will, at any time, upon request, execute and deliver any and all papers that may be necessary or desirable to perfect the title of said inventions and to such Letters Patent as may be granted therefor, to Assignee or its successors, assigns, or other legal representatives and that if Assignee or its successors, assigns, or other legal representatives shall desire to file any additional provisionals, non-provisionals, divisionals, continuations, continuation-in-parts, or extension applications or to secure ex parte or inter partes reexaminations, reissues, post grant proceedings, or derivation proceedings of such Letters Patent, or to file a disclaimer relating thereto, will, upon request, sign all papers, make all rightful oaths, and do all lawful acts requisite for the filing of such divisional or continuation applications, or such applications for reissue and the procuring thereof, and for the filing of such disclaimer, without further compensation but at the expense of Assignee or its successors, assigns, or other legal representatives.

And We do further covenant and agree that we will, at any time upon request, communicate to Assignee or its successors, assigns, or other legal representatives, such facts relating to said inventions and Letters Patent or the file history thereof as may be known to us, and testify as to the same in any interference, litigation, or other proceeding when requested so to do, without further compensation but at the expense of Assignee or its successors, assigns, or other legal representatives.

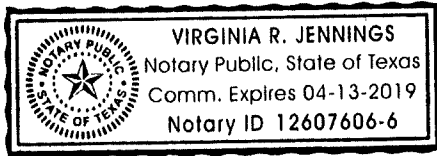
IN WITNESS WHEREOF, I have hereunto set my hand and seal this 21<sup>st</sup> day of July, 2017.

Mark Charles Penn  
Mark Charles PENN (Assignor)

STATE OF Texas §  
COUNTY OF Harris §

On this 21 day of JULY, 2017, before me personally appeared the above named ASSIGNOR, Mark Charles PENN, to me personally known/provided identification as the individual who executed the foregoing assignment, and who acknowledged to me that he executed the same of his own free will for the purposes therein set forth.

SEAL



Virginia R. Jennings  
Notary Public  
My commission expires: 4/13/2019

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 16<sup>th</sup> day of August, 2017.

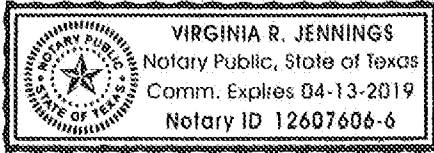
*[Handwritten Signature]*  
\_\_\_\_\_  
Anthony PINK (Assignor)

STATE OF Texas §

COUNTY OF Harris §

On this 16<sup>th</sup> day of August, 2017, before me personally appeared the above named ASSIGNOR, Anthony PINK, to me personally known/provided identification as the individual who executed the foregoing assignment, and who acknowledged to me that he executed the same of his own free will for the purposes therein set forth.

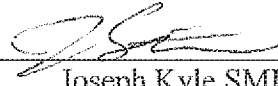
SEAL



*[Handwritten Signature]*  
Notary Public

My commission expires: 4/13/2019

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 30<sup>th</sup> day of June, 2017.



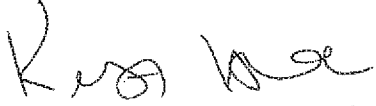
Joseph Kyle SMITH (Assignor)

STATE OF TX §

COUNTY OF Montgomery §

On this 30<sup>th</sup> day of June, 2017, before me personally appeared the above named ASSIGNOR, Joseph Kyle SMITH, to me personally known/provided identification as the individual who executed the foregoing assignment, and who acknowledged to me that he executed the same of his own free will for the purposes therein set forth.



Notary Public   
My commission expires: May 13, 2018

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 30 day of June, 2017.

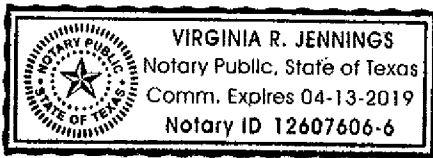
  
Reza BANIRAZI-MOTLAGH (Assignor)

STATE OF Texas §

COUNTY OF Harris §  
§

On this 30<sup>th</sup> day of June, 2017, before me personally appeared the above named ASSIGNOR, Reza BANIRAZI-MOTLAGH, to me personally known/provided identification as the individual who executed the foregoing assignment, and who acknowledged to me that he executed the same of his own free will for the purposes therein set forth.

SEAL



  
Notary Public

My commission expires: April 13, 2019



IN WITNESS WHEREOF, I have hereunto set my hand and seal this 29 day of June, 2017.

*Carl Smith*

National Oilwell Varco, L.P. (Assignee)

STATE OF Texas §

COUNTY OF Harris §

On this 29 day of June, 2017, before me personally appeared the above named ASSIGNEE, National Oilwell Varco, L.P., to me personally known/provided identification as the individual who executed the foregoing assignment, and who acknowledged to me that he executed the same of his own free will for the purposes therein set forth.

Notary Public *Kristi Johnson*

My commission expires: 8/2020

SEAL

