

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
IVANHOE ENERGY INC.	01/24/2014
RECEIVING PARTY DATA	
Name:	IVANHOE HTL PETROLEUM LTD.
Street Address:	1111 BAGBY STREET
Internal Address:	SUITE 200
City:	HOUSTON
State/Country:	TEXAS
Postal Code:	77002
PROPERTY NUMBERS Total: 1	
Property Type	Number
Patent Number:	8808632
CORRESPONDENCE DATA	
Fax Number:	(949)567-6710
<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>	
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Email:	ipprosecution@orrick.com
Correspondent Name:	ORRICK, HERRINGTON & SUTCLIFFE LLP
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ATTORNEY DOCKET NUMBER:	18153.4030
NAME OF SUBMITTER:	MARK J. SHEAN
SIGNATURE:	/Mark J. Shean/
DATE SIGNED:	08/25/2014
Total Attachments: 9	
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ASSIGNMENT

WHEREAS, Ivanhoe Energy Inc., a corporation organized and existing under and by virtue of the laws of Canada and having its principal place of business at 654-999 Canada Place, Vancouver, British Columbia, V6C 3E1 (hereinafter referred to as **ASSIGNOR**), owns full and exclusive right, title and interest to each patent applications listed in the attached **Schedule A**, and all patent and patent applications, continuation applications, continuation-in-part applications, divisional applications, and similar protection to be obtained in the United States of America, its territorial possessions and in any and all countries foreign thereto (hereinafter referred to as **THE PATENT RIGHTS**);

WHEREAS, Ivanhoe HTL Petroleum Ltd., a corporation organized and existing under and by virtue of the laws of the State of Nevada and having its principal place of business at 1111 Bagby St Suite 2000, Houston, TX 77002, United States (hereinafter referred to as **ASSIGNEE**), is desirous of acquiring the full and exclusive right, title and interest in **THE PATENT RIGHTS**;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, **ASSIGNOR** hereby sells, assigns, transfers and sets over unto **ASSIGNEE**, its successors and assigns, the full and exclusive right, title and interest to **THE PATENT RIGHTS** and to all Letters Patent or applications or similar legal protection arising from the patent applications listed in **Schedule A** and any continuation, division, renewal, substitute or reissue thereof or any legal equivalent thereof in the United States or a foreign country for the full term or terms for which the same may be granted, including all priority rights under the Paris Convention for the Protection of Industrial Property; and **ASSIGNOR** hereby authorizes and requests any officials whose duty it is to issue patents on applications as aforesaid, to issue all patents for **THE PATENT RIGHTS** to **ASSIGNEE** in accordance with the terms of this **ASSIGNMENT** and hereby transfers all rights of action, power and benefit belonging to or accruing from **The PATENT RIGHTS**, including the right to undertake proceedings to recover past and future damages and claim all other relief in respect of any acts of infringement thereof whether such acts shall have been committed before or after the date of this **ASSIGNMENT**.

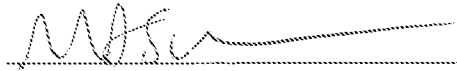
ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this **ASSIGNMENT**;

ASSIGNOR further covenants that **ASSIGNEE** will, upon its request, be provided promptly with all pertinent facts and documents relating to **The PATENT RIGHTS** and legal equivalents as may be known and accessible to **ASSIGNOR** and that **ASSIGNOR** will testify as to the same in any interference or litigation related thereto and will promptly execute and deliver to **ASSIGNEE** or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce **THE PATENT RIGHTS** and said equivalents, which may be necessary or desirable to carry out the purposes thereof.

IN TESTIMONY WHEREOF, I hereunto set my hand as of the date indicated below.

FOR IVANHOE ENERGY INC.,

Dated: 24 January 2017

Signature: 

Name: Michael A Litner

Title: SVP & Chief Technology Officer

For Ivanhoe HTL Petroleum Ltd.,

Dated: 24 January 2017

Signature: 

Name: Michael A. Litner

Title: SVP & Chief Technology Officer

Schedule A
U.S. Patents and Patent Applications

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	4/7/2000	09/958261	1/31/2012	8105482	Granted
Products Produced Form Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	9/18/2001	09/955267	9/18/2007	7270743	Granted
Modified Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	10/11/2002	10/269538	8/11/2009	7572365	Granted
Modified Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	4/17/2003	10/419053	8/11/2009	7572362	Granted
Products Produced From Rapid Thermal Processing Of Heavy Hydrocarbon Feedstocks	United States of America	3/1/2007	11/713520	11/22/2011	8062503	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	United States of America	3/11/2008	12/046363	2/19/2013	8377287	Granted
Products Produced From Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	11/1/2011	13/286974			Published
Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	12/27/2011	13/338144			Published
Reactor Feed Nozzles	United States of America	12/29/2011	13/340487			Published
Method, System, and Apparatus for Lift Gas Distribution	United States of America	12/29/2011	13/340569			Published
Method, System, and Apparatus for Separation in Processing of Feedstocks	United States of America	12/30/2011	13/341854			Published
Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	United States of America	7/18/2012	13/552536			Published
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	United States of America	2/14/2013	13/767776			Published
HTL Reactor Slide Valve Configuration	United States of America	3/4/2013	61/772127			Pending
HTL Reactor and Reheater Temperature Controls	United States of America	3/4/2013	61/772139			Pending

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
HTL Offshore Upgrading Integrated with Oil Field Production and/or Electrical Power Generation	United States of America	3/4/2013	61/772142			Pending
HTL Process from Quench to Product Recovery	United States of America	3/4/2013	61/772146			Pending
Selectivity for Thermal Upgrading of Heavy Oil Using HTL	United States of America	3/4/2013	61/772150			Pending
HTL Onshore Upgrading Integrated With Oil Field Production and/or Electrical Power Generation	United States of America	3/4/2013	61772151			Pending
HTL Reactor Geometry	United States of America	3/4/2013	61772153			Pending
Optimizing HTL Feed Boiling Point Range	United States of America	3/4/2013	61772159			Pending
HTL Reactor Feed Nozzle with Angled Entry	United States of America	3/4/2013	61/772162			Pending
Speed Bumps to Internal Riser Surface	United States of America	3/4/2013	61772168			Pending
Stripping Steam Injected into Reactor Cyclone	United States of America	3/4/2013	61/772170			Pending
HTL SO _x , TAN and H ₂ S Reduction	United States of America	3/4/2013	61/772178			Pending
HTL Feed Preconditioning for Density and BS&W	United States of America	3/4/2013	61/772181			Pending

Foreign Patents and Patent Applications

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Armenia	3/12/2008	200800578		016772	Granted
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Azerbaijan	3/12/2008	200800578		016772	Granted
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Belarus	3/12/2008	200800578		016772	Granted

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Brazil	3/12/2008	PI0801728-0			Published
Improved Reactor Feed Nozzles	Brazil	12/29/2011	BR1120130165510			Pending
Method, System, and Apparatus for Lift Gas Distribution	Brazil	12/29/2011	BR1120130165472			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Brazil	12/30/2011	BR1120130165502			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Canada	3/7/2008	2624746			Pending
Improved Reactor Feed Nozzles	Canada	12/29/2011	2823341			Pending
Method, System, and Apparatus for Lift Gas Distribution	Canada	12/29/2011	2823332			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Canada	12/30/2011	2823209			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	China	3/12/2008	200810082769.7			Allowed
Improved Reactor Feed Nozzles	China	12/29/2011	201180068766.8			Pending
Method, System, and Apparatus for Lift Gas Distribution	China	12/29/2011	201180068760.0			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	China	12/30/2011	201180068825.1			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Colombia	3/12/2008	08026210			Published
Improved Reactor Feed Nozzles	Colombia	12/29/2011	13-155.548			Published
Method, System, and Apparatus for Lift Gas Distribution	Colombia	12/29/2011	13-155.524			Published
Method, System, and Apparatus for Separation in Processing of Feedstocks	Colombia	12/30/2011	13-155.550			Published

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Ecuador	3/12/2008	SP-08-8261			Pending
Improved Reactor Feed Nozzles	Ecuador	12/29/2011	SP-2013-12733			Published
Method, System, and Apparatus for Lift Gas Distribution	Ecuador	12/29/2011	SP-2013-12727			Published
Method, System, and Apparatus for Separation in Processing of Feedstocks	Ecuador	12/30/2011	SP-2013-12731			Published
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Eurasian Patent Organization	3/12/2008	200800578	7/30/2012	016772	Granted
Improved Reactor Feed Nozzles	Eurasian Patent Organization	12/29/2011	201390972			Pending
Method, System, and Apparatus for Lift Gas Distribution	Eurasian Patent Organization	12/29/2011	201390974			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Eurasian Patent Organization	12/30/2011	201390989			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	European Patent Office	3/12/2008	08250846.6			Published
Improved Reactor Feed Nozzles	European Patent Office	12/29/2011	11813931.0			Published
Method, System, and Apparatus for Lift Gas Distribution	European Patent Office	12/29/2011	11811494.1			Published
Method, System, and Apparatus for Separation in Processing of Feedstocks	European Patent Office	12/30/2011	11811503.9			Published
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	India	3/7/2008	479/KOL/2008			Pending
Improved Reactor Feed Nozzles	India	12/29/2011	5702/DELNP/2013			Pending
Method, System, and Apparatus for Lift Gas Distribution	India	12/29/2011	5700/DELNP/2013			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	India	12/30/2011	5697/DELNP/2013			Pending

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Modified Thermal Processing of Heavy Hydrocarbon Feedstocks	Indonesia	10/11/2004	P-00200400512			Published
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Indonesia	3/12/2008	P-00200800144			Allowed
Improved Reactor Feed Nozzles	Indonesia	12/29/2011	W-00201303505			Pending
Method, System, and Apparatus for Lift Gas Distribution	Indonesia	12/29/2011	W-00201303503			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Indonesia	12/30/2011	W-00201303521			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Iraq	3/4/2008	52/2008			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Japan	3/11/2008	2008-61888			Published
Improved Reactor Feed Nozzles	Japan	12/29/2011	2013-547680			Pending
Method, System, and Apparatus for Lift Gas Distribution	Japan	12/29/2011	2013-547681			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Japan	12/30/2011	2013-547711			Pending
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Kazakhstan	3/12/2008	200800578		016772	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Kuwait	3/12/2008	36/2008			Pending
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Kyrgyzstan	3/12/2008	200800578		016772	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Libya	3/12/2008	3580/2008			Pending

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Products Produced From Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	Mexico	9/18/2001	PA/A2003/002341	5/25/2009	266943	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Mexico	3/12/2008	MX/A/2008/003534	5/29/2012	299657	Granted
Improved Reactor Feed Nozzles	Mexico	12/29/2011	MX/a/2013/007723			Pending
Method, System, and Apparatus for Lift Gas Distribution	Mexico	12/29/2011	MX/a/2013/007722			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Mexico	12/30/2011	MX/a/2013/007721			Pending
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Moldova	3/12/2008	200800578		016772	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Oman	3/9/2008	42/2008			Pending
Improved Reactor Feed Nozzles	Oman	12/29/2011	OM/P/2013/00160			Pending
Method, System, and Apparatus for Lift Gas Distribution	Oman	12/29/2011	OM/P/2013/00161			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Oman	12/30/2011	OM/P/2013/00162			Pending
Products Produced Form Rapid Thermal Processing of Heavy Hydrocarbon Feedstocks	Patent Cooperation Treaty	9/18/2001	PCT/CA2001/001316			National Phase Entered
Improved Reactor Feed Nozzles	Patent Cooperation Treaty	12/29/2011	PCT/US2011/067973			National Phase Entered
Method, System, and Apparatus for Lift Gas Distribution	Patent Cooperation Treaty	12/29/2011	PCT/US2011/067985			National Phase Entered
Method, System, and Apparatus for Separation in Processing of Feedstocks	Patent Cooperation Treaty	12/30/2011	PCT/US2011/068237			National Phase Entered
Methods For Producing Reduced Resid And Bottomless Products from Heavy Hydrocarbon Feedstocks	Peru	3/11/2008	455.2008	4/27/2012	6430	Granted

Title	Country	Appl Date	Appl No.	Grant Date	Grant No.	Status
Improved Reactor Feed Nozzles	Peru	12/29/2011	001493-2013/DIN			Pending
Method, System, and Apparatus for Lift Gas Distribution	Peru	12/29/2011	001494-2013/DIN			Pending
Method, System, and Apparatus for Separation in Processing of Feedstocks	Peru	12/30/2011	001492-2013/DIN			Pending
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Russian Federation	3/12/2008	200800578		016772	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products from Heavy Hydrocarbon Feedstocks	Saudi Arabia	3/12/2008	111320425			Pending
Methods And Systems For Producing Reduced Resid And Bottomless Products from Heavy Hydrocarbon Feedstocks	Saudi Arabia	3/12/2008	08290136	10/29/2011	2802	Granted
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Tajikistan	3/12/2008	200800578		016772	Granted
Methods And System For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Turkmenistan	3/12/2008	200800578		016772	Granted
Methods And Systems For Producing Reduced Resid And Bottomless Products From Heavy Hydrocarbon Feedstocks	Venezuela	3/11/2008	2008-000463			Published