PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Harold J. VINEGAR	09/08/2011
Scott Lee WELLINGTON	09/08/2011
Eric Pierre DE ROUFFIGNAC	10/05/2011
John Michael KARANIKAS	08/24/2011
Ilya Emil BERCHENKO	08/25/2011
George Leo STEGEMEIER	08/24/2011
Kevin Albert MAHER	10/18/2011
Etuan ZHANG	10/04/2011
Gordon Thomas SHAHIN	08/25/2011
James Louis MENOTTI	01/18/2012
John Matthew COLES	01/18/2011
Thomas David FOLWER	08/24/2011
Charles Robert KEEDY	10/05/2011
Ajay Madhav MADGAVKAR	09/07/2011
Robert Martijn VAN HARDEVELD	08/29/2011
Robert Charles RYAN	08/25/2011
Lanny Gene SCHOELING	09/27/2011
Frederick Gordon CARL	03/25/2012

RECEIVING PARTY DATA

Name:	SHELL OIL COMPANY
Street Address:	P.O. BOX 2463
Internal Address:	ONE SHELL PLAZA
City:	Houston
State/Country:	TEXAS
Postal Code:	772522463

PROPERTY NUMBERS Total: 1

501870541

	Property Type	Number
ı		PATENT

REEL: 027952 FRAME: 0101

8622 00

₩ 1 Patent Number: 7798221

CORRESPONDENCE DATA

Fax Number: (713)241-6617 Phone: 7132413997

Email: cathy.callen@shell.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name: SHELL OIL COMPANY

P.O. BOX 2463 Address Line 1: Address Line 2: ONE SHELL PLAZA

Address Line 4: Houston, TEXAS 772522463

ATTORNEY DOCKET NUMBER:

TH1962-02USAP

NAME OF SUBMITTER:

Del S. Christensen

Total Attachments: 17

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REEL: 027952 FRAME: 0102

PATENT

ASSIGNMENT

WHEREAS, we, Harold J. Vinegar, Scott Lee Wellington, Eric Pierre de Rouflignac, John Michael Karanikas, Ilya Emil Berchenko, George Leo Stegemeler, Kevin Albert Maher, Etuan Zhang, Gordon Thomas Shahin, James Louis Menotti, John Matthew Coles, Thomas David Fowler, Charles Robert Keedy, Ajay Madhav Madgavkar, Robert Martijn Van Hardeveld, Robert Charles Ryan, Lanny Gene Schoeling and Frederick Gordon Carl, have made a certain improvement in IN SITU RECOVERY FROM A HYDROCARBON CONTAINING FORMATION for which a United States Patent application was filed and assigned serial no. 11/809,723 and has since been granted and assigned Patent No. 7,798,221 thereon, and identified as TH1962 02(US), have been executed by us, and,

WHEREAS, SHELL OIL COMPANY, a Delaware Corporation, has equitable rights in and to this invention and desires to confirm such rights and to acquire all right, title and interest in and to said invention:

NOW THEREFORE, for valuable consideration received, we hereby sell, assign, and transfer to said SHELL OIL COMPANY, its successors and assigns, all right, title and interest in and to said invention in the United States and in all other countries throughout the world; including without limitation those in and to the above-named application and any continuation, substitute or division application thereof and the patent or patents which may be issued thereon in the United States and any reissue of any such patent, and those in and to any application or patent or utility model in any and all such other countries of the world, and further including the right to file further applications in all countries throughout the world in the name of SHELL OIL COMPANY or whomsoever that company may nominate, and to claim the priority of the above-named United States application under the International Convention of Paris of 1883.

With respect to any country where for the filing of such an application and/or the transfer of priority rights a separate deed of sate, assignment or transfer is required, we will undertake at the request of SHELL OIL COMPANY to execute such separate deed to SHELL OIL COMPANY or to whomsoever that company may nominate.

And we hereby agree that we will upon request execute any instrument which SHELL OIL COMPANY desires to carry this assignment in effect, and perfect the title transferred hereby, or to prosecute any of the above-mentioned United States applications or any foreign application on this invention.

And the Commissioner of Patents of the United States is hereby authorized to issue Letters Patent on said above-named application and on any continuation, substitute or division thereof to SHELL OIL COMPANY.

IN TESTIMONY WHEREOF, we have hereunto subscribed our names.

2000	Witnesses:
Hard IV megar	Oldin Vivagas
HAROLD J. VINEGAR	(Witness)
9/3/2011'	(Witness)
Date	(**************************************
SCOTT LEE WELLINGTON	(Witness)
Date	(Witness)

Page 1 of 3

ASSIGNMENT

WHEREAS, we, Harold J. Vinegar, Scott Lee Wellington, Eric Pierre de Rouffignac, John Michael Karanikas, Ilya Emil Berchenko, George Leo Stegemeier, Kevin Albert Maher, Etuan Zhang, Gordon Thomas Shahin, James Louis Menotti, John Matthew Coles, Thomas David Fowler, Charles Robert Keedy, Ajay Madhav Madgavkar, Robert Martijn Van Hardeveld, Robert Charles Ryan, Lanny Gene Schoeling and Frederick Gordon Carl, have made a certain improvement in IN SITU RECOVERY FROM A HYDROCARBON CONTAINING FORMATION for which a United States Patent application was filed and assigned serial no. 11/809,723 and has since been granted and assigned Patent No. 7,798,221 thereon, and identified as TH1962 02(US), have been executed by us, and,

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NOW THEREFORE, for valuable consideration received, we hereby sell, assign, and transfer to said SHELL OIL COMPANY, its successors and assigns, all right, title and interest in and to said invention in the United States and in all other countries throughout the world; including without limitation those in and to the above-named application and any continuation, substitute or division application thereof and the patent or patents which may be issued thereon in the United States and any reissue of any such patent, and those in and to any application or patent or utility model in any and all such other countries of the world, and further including the right to file further applications in all countries throughout the world in the name of SHELL OIL COMPANY or whomsoever that company may nominate, and to claim the priority of the above-named United States application under the International Convention of Paris of 1883.

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And we hereby agree that we will upon request execute any instrument which SHELL OIL COMPANY desires to carry this assignment in effect, and perfect the title transferred hereby, or to prosecute any of the above-mentioned United States applications or any foreign application on this invention.

And the Commissioner of Patents of the United States is hereby authorized to Issue Letters Patent on said above-named application and on any continuation, substitute or division thereof to SHELL OIL COMPANY.

IN TESTIMONY WHEREOF, we have hereunto subscribed our names.

		Witnesses:
HAROLD J. VINEGAR		(Witness)
Date		(Witness)
SOOTI LEE WELLINGTON		(Witness) Suda Pel
9-8-11	Page 1 of 3	How by PATENT MIX
		REEL: 027952 FRAME: 0104

E. O. Ollyn	dand-
ERIC PIERRE DE ROUFFIGNAC	(Witness)
	(Witness)
JOHN MICHAEL KARANIKAS	(Witness)
Date	(Witness)
IIYA EMIL BERCHENKO	(Witness)
Date	(Witness)
GEORGE LEO STEGEMEIER	(Witness)
Date	(Witness)
KEVIN ALBERT MAHER	(Witness)
Date	(Witness)
ETUAN ZHANG	(Witness)
Date	(Witness)
GORDON THOMAS SHAHIN	(Witness)
Date	(Witness)
JAMES LOUIS MENOTTI	(Witness)

Date

(Witness)

ERIC PIERRE DE ROUFFIGNAC	(Witness)
Date	(Witness)
John Michael Karanikas	Richard A. Macleod (Witness) (Witness)
JOHN MICHAEL KARANIKAS	(Witness)
August 24 = 9, 2011	Gary T Ross
Date	(Witness)
IIYA EMIL BERCHENKO	(Witness)
Date	(Witness)
GEORGE LEO STEGEMEIER	(Witness)
Date	(Witness)
KEVIN ALBERT MAHER	(Witness)
Date	(Witness)
ETUAN ZHANG	(Witness)
Date	(Witness)
GORDON THOMAS SHAHIN	(Witness)
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JAMES LOUIS MENOTTI	(Witness)
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ERIC PIERRE DE ROUFFIGNAC	(Witness)
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JOHN MICHAEL KARANIKAS	(Witness)
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IIYA EMIL BERCHENKO	(Witness) (Witness) (Millians)
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GEORGE LEO STEGEMÉIER	(Wilness)
Date	(Witness)
KEVIN ALBERT MAHER	(Witness)
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ETUAN ZHANG	(Witness)
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GORDON THOMAS SHAHIN	(Witness)
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JAMES LOUIS MENOTTI	(Witness)
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ERIC PIERRE DE ROUFFIGNAC	(Wilness)
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JOHN MICHAEL KARANIKAS	(Witness)
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KEVIN ALBERT MAHER	(Witness)
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GORDON THOMAS SHAHIN	(Witness)
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ERIC PIERRE DE ROUFFIGNAC	(Witness)
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JOHN MICHAEL KARANIKAS	(Witness)
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IIYA EMIL BERCHENKO	(Witness)
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KEVIN ALBERT MAHER	(Witness)
18- Ucf - Z011 Date	(Witness)
ETUAN ZHANG	(Witness)
Date	(Witness)
GORDON THOMAS SHAHIN	(Witness)
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JAMES LOUIS MENOTTI	(Witness)
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ERIC PIERRE DE ROUFFIGNAC	(Witness)
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JOHN MICHAEL KARANIKAS	(Witness)
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GORDON THOMAS SHAHIN	(Witness)
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JAMES LOUIS MENOTTI	(Witness)
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ERIC PIERRE DE ROUFFIGNAC	(Witness)
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JOHN MICHAEL KARANIKAS	(Witness)
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KEVIN ALBERT MAHER	(Witness)
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ETUAN ZHANG	(Witness)
Date	(Witness)
GORDON THOMAS SHAHIN 8-25-1 Date	(Witness) (Witness)
JAMES LOUIS MENOTTI	(Witness)
Date	(Witness)

PATENT REEL: 027952 FRAME: 0111

ERIC PIERRE DE ROUFFIGNAC	(Witness)
Date	(Witness)
JOHN MICHAEL KARANIKAS	(Witness)
Date	(Witness)
IIYA EMIL BERCHENKO	(Witness)
Date	(Witness)
GEORGE LEO STEGEMEIER	(Witness)
Date	(Witness)
KEVIN ALBERT MAHER	(Witness)
Date	(Witness)
ETUAN ZHANG	(Witness)
Date	(Witness)
GORDON THOMAS SHAHIN	(Witness)
Date	(Witness)
Jam Jour Mensel SAMES LOUIS MENOTTI	Statche Delec (Witness)
1-18-12—————————————————————————————————	(Witness))

JOHN MATTHEW COLES 1/18/11 Date	(Willess) (Willess) (Willess)
THOMAS DAVID FOWLER Date	(Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR	(Witness)
Date	(Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness)
Date	(Witness)
ROBERT CHARLES RYAN	(Witness)
Date	(Witness)
LANNY GENE SCHOELING	(Witness)
Date	(Witness)
FREDERICK GORDON CARL	(Witness)
Date	(Witness)

JOHN MATTHEW COLES	(Witness)
Mouras Dovi Harely THOMAS DAVID FOWLER 8/24/2011 Date	(Witness) Ruhard A. Marled (Witness) (Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR	(Witness)
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ROBERT MARTIJN VAN HARDEVELD	(Witness)
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ROBERT CHARLES RYAN	(Witness)
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LANNY GENE SCHOELING	(Witness)
Date	(Witness)
FREDERICK GORDON CARL	(Witness)
Date	(Witness)

JOHN MATTHEW COLES	(Witness)
Date	(Witness)
THOMAS DAVID FOWLER	(Witness)
Date	(Witness)
Charles Robert Keedy CHARLES ROBERT KEEDY Date	(Witness) (Witness) (Witness)
AJAY MADHAV MADGAVKAR	(Witness)
Date	(Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness)
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ROBERT CHARLES RYAN	(Witness)
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LANNY GENE SCHOELING	(Witness)
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FREDERICK GORDON CARL	(Witness)
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JOHN MATTHEW COLES	(Witness)
Date	(Witness)
THOMAS DAVID FOWLER	(Witness)
Date	(Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR 7th September, 2011 Date	(Witness) (Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness)
Date	(Witness)
ROBERT CHARLES RYAN	(Witness)
Date	(Witness)
LANNY GENE SCHOELING	(Witness)
Date	(Witness)
FREDERICK GORDON CARL	(Witness)
Date	(Witness)

JOHN MATTHEW COLES	(Witness)
Date	(Witness)
THOMAS DAVID FOWLER	(Witness)
Date	(Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR	(Witness)
Date	(Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness) A. Hoek
Date 29 /08 / 2011	(Witness) J. SICTSIN
ROBERT CHARLES RYAN	(Witness)
Date	(Witness)
LANNY GENE SCHOELING	(Witness)
Date	(Witness)
FREDERICK GORDON CARL	(Witness)
Date	(Witness)

PATENT REEL: 027952 FRAME: 0117

JOHN MATTHEW COLES	(Witness)
Date	(Witness)
THOMAS DAVID FOWLER	(Witness)
Date	(Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR	(Witness)
Date	(Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness)
Date	(Witness)
Robert Charles Ryan ROBERT CHARLES RYAN Aug 25, 204 Date	(Witness) Witness) Witness)
LAMNY GENE SCHOELING	Cathy Callen (Witness)
27 Sept 2011 Date	(Witness)
REDERICK GORDON CARL	(Witness)
Date	(Witness)

JOHN MATTHEW COLES	(Witness)
Date	(Witness)
THOMAS DAVID FOWLER	(Witness)
Date	(Witness)
CHARLES ROBERT KEEDY	(Witness)
Date	(Witness)
AJAY MADHAV MADGAVKAR	(Witness)
Date	(Witness)
ROBERT MARTIJN VAN HARDEVELD	(Witness)
Date	(Witness)
ROBERT CHARLES RYAN	(Witness)
Date	(Witness)
LANNY GENE SCHOELING	(Witness)
Date	(Witness)
PREDERICK GORDON CARL (Deceased) JOAN CARL (sole heir) on behalf of Frederick Gordon Carl	(Witness)
March 25, 2012	(Witness)

Page 3 of 3

PATENT REEL: 027952 FRAME: 0119

RECORDED: 03/29/2012