



**Innovation, Energy and Mines**

Petroleum Branch  
360-1395 Ellice Ave , Winnipeg, Manitoba, Canada R3G 3P2  
T 204-945-6577 F 204-945-0586  
www.manitoba.ca

July 29, 2013

Brad Thiessen  
Tundra Oil & Gas Partnership  
1700- One Lombard Place  
Winnipeg, MB R3B 0X3

Dear Brad,

**RE: Ewart Units No. 2, 3& 4 Project Approval and Determination of Third Tier EOR Factors**

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The Petroleum Branch is pleased to grant approval of Ewart Unit No. 2 covering section 29-7-28 WPM, Ewart Unit No. 3 covering section 29-8-28 WPM and Ewart Unit No. 4 covering section 36- 8-29 WPM. The effective date for all above mentioned units is August 1, 2013.

The execution pages of the Unit Agreements are signed and attached.

Attached are Waterflood Order No. 29 and Waterflood Order no. 30 which applies to Ewart Units 2 and 3, respectively. Tundra is reminded that separate conversion applications are required for any existing horizontals to be converted to waterflood within these new Units.

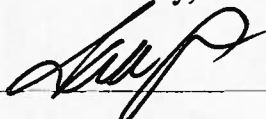
The waterflood orders require Tundra to conduct annual pressure surveys and submit annual progress reports. Tundra is reminded that the 2013 reports are to be submitted to the Director within 60 days after the end of the calendar year.

Ewart Units No. 2 & 3 will qualify for a Third Tier EOR Factors (TTEF). The Branch has calculated a proposed TTEF of 0.7519 for Ewart Unit No. 2 and 0.6892 for Ewart Unit No. 3 to apply to all tracts in the units. Table 1 shows the TTEFs calculation. The TTEFs are based on summed estimates of remaining primary recoverable reserves and incremental waterflood recoverable reserves for each respective units. Please provide the Branch with any comments on the proposed TTEFs by August 29, 2013.

Ewart Unit No. 4 has no approval yet to start water injection. Please inform the Branch 1(one) month in advance of when Tundra wants to start injection so a Waterflood Order can be created and TTEF calculated, etc.

If you have any questions in respect of the approvals or the TTEF calculations please contact Leo Leonen at (204) 945-6570.

Yours truly,



Keith Lowdon  
Director

Cc: Administration, Winnipeg  
Engineering, Virden

**Table 1. Third Tier EOR Factors Calculation**

**Tundra Ewart Unit #2**

Unit	Ewart Unit No. 2
Operator	Tundra Oil & Gas
Sections	1
Effective Date of Third EOR Production	August 1, 2013
Cumulative Unit Production to May 31, 2013 (m <sup>3</sup> )	29,073.0
Primary Recoverable Reserves (m <sup>3</sup> )	41,312.7
Incremental EOR Rec. Reserves (IERR) (m <sup>3</sup> )	37,094.8
Total Remaining Rec. Reserves (TRES) (m <sup>3</sup> )	49,334.5
Third Tier EOR Factor (TTEF)	0.7519

**Tundra Ewart Unit #3**

Unit	Ewart Unit No. 3
Operator	Tundra Oil & Gas
Sections	1
Effective Date of Third EOR Production	August 1, 2013
Cumulative Unit Production to May 31, 2013 (m <sup>3</sup> )	43,292.0
Primary Recoverable Reserves (m <sup>3</sup> )	72,543.1
Incremental EOR Rec. Reserves (IERR) (m <sup>3</sup> )	64,869.1
Total Remaining Rec. Reserves (TRES) (m <sup>3</sup> )	94,120.2
Third Tier EOR Factor (TTEF)	0.6892

IN WITNESS WHEREOF the Parties have executed this Agreement each on the date shown below.

HER MAJESTY THE QUEEN IN RIGHT OF THE  
PROVINCE OF MANITOBA

Aug 1, 2013  
(DATE)

[Signature]

ADDRESS FOR SERVICE:

*Manitoba Innovation, Energy and Mines*

*Petroleum Branch*

*360 – 1395 Ellice Avenue*

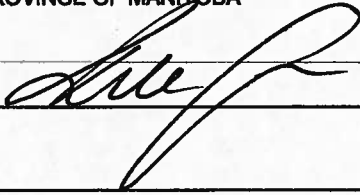
*Winnipeg, MB R3G 3P2*

Execution Page forming part of the Unit Agreement - Ewart Unit No. 4

IN WITNESS WHEREOF the Parties have executed this Agreement each on the date shown below.

HER MAJESTY THE QUEEN IN RIGHT OF THE  
PROVINCE OF MANITOBA

Aug 1, 2013  
(DATE)



ADDRESS FOR SERVICE:

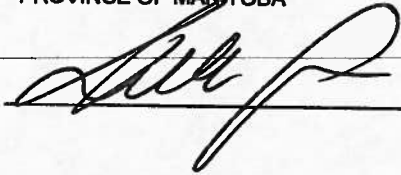
*Manitoba Innovation, Energy and Mines*  
*Petroleum Branch*  
*360 - 1395 Ellice Avenue*  
*Winnipeg, MB R3G 3P2*

Execution Page forming part of the Unit Agreement - Ewart Unit No. 3

IN WITNESS WHEREOF the Parties have executed this Agreement each on the date shown below.

HER MAJESTY THE QUEEN IN RIGHT OF THE  
PROVINCE OF MANITOBA

Aug 1, 2013  
(DATE)



ADDRESS FOR SERVICE:

*Manitoba Innovation, Energy and Mines*  
*Petroleum Branch*  
*360 – 1395 Ellice Avenue*  
*Winnipeg, MB R3G 3P2*

Execution Page forming part of the Unit Agreement - Ewart Unit No. 2



**MINISTER OF  
INNOVATION, ENERGY AND MINES**

Legislative Building  
Winnipeg, Manitoba CANADA  
R3C 0V8

**MINISTERIAL ORDER**

**Subsection 116(2)  
THE OIL AND GAS ACT**

**WATERFLOOD ORDER NO. 29**

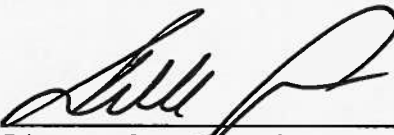
**Pertaining to Waterflood Operations  
in Ewart Unit No. 2**

- 1.0 The Unit Operator shall conduct waterflood operations by injecting water into the Daly Sinclair Middle Bakken - Three Forks Pool underlying Ewart Unit No. 2 ("the Unit") through the wells listed in Schedule A. The Director may approve the conversion of additional wells in the Unit to water injection.
- 1.1 Every injection well shall be completed as approved under Section 47 of the Drilling and Production Regulation ("the Regulation").
- 1.2 The maximum wellhead pressure at which water may be injected is 7500 kPa.
- 1.3 The Director may, from time to time, establish a maximum or minimum rate at which water may be injected into a well.
- 1.4 The annulus of each injection well shall be pressure tested in accordance with Section 50 of the Regulation.
- 2.0 The Unit Operator shall conduct an annual survey to determine the level and distribution of reservoir pressure in the Unit. A summary of the results of any pressure surveys conducted during the year are to be included in the annual waterflood progress report required under Section 73 of the Regulation.
- 2.1 The frequency of pressure surveys may be reduced where the Director is satisfied that more frequent surveys will not assist the Unit Operator in monitoring the effectiveness of the waterflood.
- 2.2 The Unit Operator is responsible for monitoring the effectiveness of the waterflood and for collecting such reservoir data and other information as is necessary to evaluate and optimize waterflood performance.

- 2.3 The Unit Operator shall advise the Petroleum Branch of the suspension of water injection at any well, any indication of channelling or breakthrough of injected water to a producing well or out of zone and any other detrimental effects that may be attributable to the waterflood operations.
- 3.0 The Unit Operator shall file a report of production or injection for each well in the Unit in accordance with Section 120 of the Regulation.
- 4.0 The Unit Operator shall file an annual waterflood progress report in accordance with Section 73 of the Regulation.

Date

Aug 1, 2013



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Director of Petroleum for  
Minister Innovation, Energy and Mines

**SCHEDULE A**

**WATERFLOOD ORDER NO. 29**

**EWART UNIT NO. 2**

**WATER INJECTION WELLS**

<b>WELL NAME</b>	<b>LSD</b>	<b>SEC</b>	<b>TWP</b>	<b>RGE</b>
Tundra Daly Sinclair Prov. HZNTL WIW	12	29	07	28
Tundra Daly Sinclair Prov. HZNTL WIW	A5	29	07	28



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**MINISTERIAL ORDER**

**Subsection 116(2)  
THE OIL AND GAS ACT**

**WATERFLOOD ORDER NO. 30**

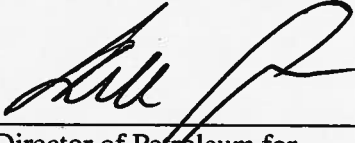
**Pertaining to Waterflood Operations  
in Ewart Unit No. 3**

- 1.0 The Unit Operator shall conduct waterflood operations by injecting water into the Daly Sinclair Middle Bakken - Three Forks Pool underlying Ewart Unit No. 3 ("the Unit") through the wells listed in Schedule A. The Director may approve the conversion of additional wells in the Unit to water injection.
- 1.1 Every injection well shall be completed as approved under Section 47 of the Drilling and Production Regulation ("the Regulation").
- 1.2 The maximum wellhead pressure at which water may be injected is 7000 kPa.
- 1.3 The Director may, from time to time, establish a maximum or minimum rate at which water may be injected into a well.
- 1.4 The annulus of each injection well shall be pressure tested in accordance with Section 50 of the Regulation.
- 2.0 The Unit Operator shall conduct an annual survey to determine the level and distribution of reservoir pressure in the Unit. A summary of the results of any pressure surveys conducted during the year are to be included in the annual waterflood progress report required under Section 73 of the Regulation.
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- 4.0 The Unit Operator shall file an annual waterflood progress report in accordance with Section 73 of the Regulation.

Date

Aug 1, 2013

  
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Director of Petroleum for  
Minister Innovation, Energy and Mines

**SCHEDULE A**

**WATERFLOOD ORDER NO. 30**

**EWART UNIT NO. 3**

**WATER INJECTION WELLS**

<b>WELL NAME</b>	<b>LSD</b>	<b>SEC</b>	<b>TWP</b>	<b>RGE</b>
Tundra Daly Sinclair Prov. HZNTL WIW	A12	29	08	28
Tundra Daly Sinclair Prov. HZNTL WIW	B12	29	08	28