

ENHANCED OIL RECOVERY Approval No. 10147B

MADE at the City of Calgary, in the Province of Alberta, on

an 25/06

ALBERTA ENERGY AND UTILITIES BOARD

IN THE MATTER of a scheme of Canadian Natural Resources Limited for enhanced recovery of oil by water/polymer and water injection in part of the Wabiskaw-McMurray Deposit in the Athabasca Oil Sands Area.

WHEREAS the Lieutenant Governor in Council. by Order in Council Number O.C. 23/2006 dated July 17, 2006. hereto attached as Appendix D, has authorized the granting of this approval.

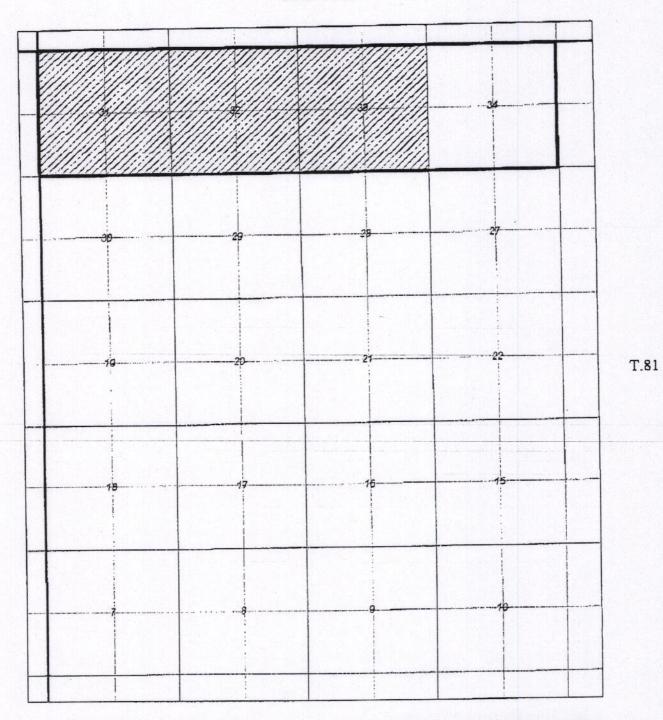
The Alberta Energy and Utilities Board, pursuant to the Oil Sands Conservation Act, chapter O-7 of the Revised Statutes of Alberta. 2000, orders as follows:

- 1) Board Approval No. 10147 is amended.
- 2) The following subclause is added after clause 1, subclause b:
 - c) Application No. 1410470,
- 3) Clause 2 is struck out and the following is substituted:
 - 2) Water/polymer and water, as identified in EUB Guide 51, may be injected into the subject oil sands deposit through the well(s) with the following unique identifier(s):

00/14-31-081-22W4/0	00/13-33-081-22W4/0
00/15-31-081-22W4/0	00/14-33-081-22W4/0
00/16-31-081-22W4/2	00/15-33-081-22W4/0
00/13-32-081-22W4/0	00/16-33-081-22W4/0
02/13-32-081-22W4/0	W0/13-34-081-22W4/0
00/14-32-081-22W4/0	02/15-34-081-22W4/0
00/15-32-081-22W4/0	02/16-34-081-22W4/0
00/16-32-081-22W4/0	

- 4) The following clause is added after clause 5:
 - 6) The Operator shall evaluate the feasibility of water recycling and using brackish water for polymer creation and report on the results by June 30, 2006 or prior to any proposed expansion to the test, for experimental or commercial purposes.
- 5) Appendix A is struck out and Appendix A hereto attached is substituted.
- 6) Attached hereto as Appendix D to this approval is the Order of the Lieutenant Governor in Council authorizing the granting of the approval.

R.22 W.4M.



ATHABASCA OIL SANDS AREA APPENDIX A TO APPROVAL NO. 10147B

Scheme Approvals Areas of Change

My Added

//// Deleted

R.22 W.4M.

T.81

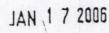
ATHABASCA OIL SANDS AREA APPENDIX A TO APPROVAL NO. 10147B Scheme Approvals Areas of Change

Added
/// Deleted

Appendix D to Approval No. 10147B

O.C.

23/2006





Order in Council

ORDER IN COUNCIL

Approved and ordered:

Lieutenant Governor

The Lieutenant Governor in Council authorizes the Alberta Energy and Utilities Board to grant Amendment B to Approval No. 10147 to Canadian Natural Resources Limited in the form attached.





For Information only

Recommended by:

Minister of Energy

Authority:

Oil Sands Conservation Act

(section 13)

Calgary Office 640 - 5 Avenue SW Calgary, Alberta Canada T2P 3G4 Tel 403 297-8311 Fax 403 297-7336

September 22, 2005

ATTN', DON FOX (780) 891 - 3139

Robin Zabek, Exploitation Engineer Canadian Natural Resources 2500, 855 – 2 Street SW Calgary, AB T2P 4J8

Dear Sir:

REQUEST TO INCREASE MAXIMUM WELLHEAD INJECTION PRESSURE BRINTNELL WABISKAW – MCMURRAY HORSETAIL POLYMER FLOOD CLASS II INJECTION WELLS - 102/15-34-081-22W4/0 (Licence # 0223816) & 102/16-34-081-22W4/0 (Licence # 0223817) APPLICATION # 1418578

The EUB has reviewed your September 13, 2005 submission requesting that the maximum wellhead injection pressure (MWIP) of the subject wells be increased from 3500 kPag to 7650 kPag. Based on the information provided, this request is approved.

Please direct any questions or concerns to the undersigned at 297-3265.

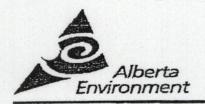
Yours truly,

Dave Baker, C.E.T. Technical Specialist

Well Operations, Compliance and Operations Branch

/db

pc. Frank Levstik, EUB- Resources Applications
Microfilm



LICENCE

PURSUANT TO THE PROVISIONS OF THE WATER ACT

PAGE 03/05

LICENCE No.

00230626-00-00

FILE No.

00218314

Canadian Natural Resources Limited 2500, 855-2 Street, SW Calgary, Alberta T2P 4J8

780-427-7824

is authorized to temporarily divert 14,400 cubic metres of water from the well in LSD 15-27-081-22-W4 for the purpose of industrial (injection) subject to the attached conditions.

2006 12 31

Expiry Date (Y/M/D)

Designated Director under the Act

Form WA TDL1 (2005)



LICENCE AMENDMENT

PURSUANT TO THE PROVISIONS OF THE WATER ACT

LICENCE No.

00219873-00-00

FILE No.

00079211

AMENDMENT No.

00219873-00-03

Canadian Natural Resources Limited 2500, 855-2 Street, SW Calgary, Alberta **T2P 4J8**

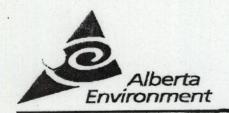
The licence is amended as follows:

Extend the expiry date from October 31, 2005 to April 30, 2006.

Designated Director under the Act

2005 10 28 Dated (Y/M/D)

71 4



LICENCE

PURSUANT TO THE PROVISIONS OF THE WATER ACT

LICENCE No.

00219873-00-00

FILE No.

00079211

AMENDMENT No.

00219873-00-02

Canadian Natural Resources Limited 2500, 855-2 Street SW Calgary, Alberta T2P 4J8

The licence is amended as follows:

Designated Director under the Act

Extend the expiry date from July 31, 2005 to October 31, 2005.

2005 07 25

Dated (Y/M/D)



780-427-7824

LICENCE AMENDMENT

PURSUANT TO THE PROVISIONS OF THE WATER ACT

LICENCE No.

00219873-00-00

FILE No.

00079211

AMENDMENT No.

00219873-00-01

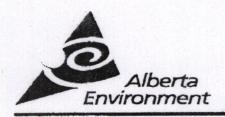
Canadian Natural Resources Limited 2500, 855-2 Street, SW Calgary, Alberta T2P 4J8

The licence is amended as follows:

Extend the expiry date from May 31, 2005 to July 31, 2005. 1.

Designated Director under the Act

2005 05 30 Dated (Y/M/D)



LICENCE

PURSUANT TO THE PROVISIONS OF THE WATER ACT

LICENCE No.

00219873-00-00

FILE No.

00079211

Canadian Natural Resources Limited 2500, 855-2 Street, SW Calgary, Alberta T2P 4J8

is authorized to temporarily divert 14,400 cubic metres of water from the well in LSD 15-27-081-22-W4 for the purpose of industrial (injection) subject to the attached conditions.

2005 05 31

Expiry Date (Y/M/D)

Designated Director under the Act

2005 04 29

Dated (Y/M/D)

Licence No. 00219873-00-00 File No. 00079211

CONDITIONS

DIVERSION OF WATER

- 1. The licensee shall reclaim all abandoned wells or other holes relating to the water diversion under this licence in accordance with the Water (Ministerial) Regulation of the Water Act, and shall submit a reclamation report to the Director after completion of the water diversion.
- After the completion of the water diversion and the well is to be used for household or licensable purposes, the licensee shall maintain the well in accordance with the Water (Ministerial) Regulation.
- 3. The licensee is authorized to divert water from the wells at:

LOCATION	PRODUCTION INTERVAL (metres)	MAXIMUM PUMPING RATE (cubic metres per day)
15-27-81-22-W4	266.8-326.8	450.0
	**	

 If applicable, the licensee shall position the pump intake in the proposed production well(s) above the top of the aquifer.

MONITORING

- 5. The licensee shall:
 - equip the diversion site(s) with a cumulative meter or other device which registers the quantity of water pumped,

1, 17

- (b) measure the water levels in the diversion site(s) on a weekly basis while the pump is operating, and
- (c) submit the data to the Director within 30 days after the completion of the water diversion.

COMPLAINT INVESTIGATION

6. The licensee shall investigate all written complaints relating to allegations of surface water and groundwater interference as a result of the diversion site(s) operation within a distance specified by the Director.

GENERAL

 The licensee shall hold harmless the Minister of Environment or any other agent of the Government of Alberta for damage or damage claims arising out of the water



Licence No. File No. 00219873-00-00 00079211

CONDITIONS

diversion.

780-427-7824

- 8. The licensee shall retain a copy of this licence at the point of the water diversion and, where applicable, retain a copy in the water tanker while transporting water.
- The licensee shall obtain right-of-way permission to access the water diversion site.
- The licensee shall not deposit any substance that will adversely affect the water body.
- 11. The licensee shall reclaim any disturbed bed and banks of the water body and areas associated with the water diversion to the original contours that existed prior to the commencement of the water diversion.
- 12. The licensee shall prevent siltation and erosion of the water body resulting from the water diversion.
- 13. Where applicable, the licensee shall only release water to a water body when the quality of water is equal to or better than the quality of water in the receiving water body.

Designated Director under the Act

2005 04 29

Dated (Y/M/D)