



Canadian Natural Resources Limited

Application to Amend Approval No. 6280
(Primary Recovery Scheme)
Cold Lake Oil Sands Area

February 19, 2008

ALBERTA ENERGY AND UTILITIES BOARD

Decision 2008-015: Canadian Natural Resources Limited, Application to Amend Approval No. 6280 (Primary Recovery Scheme), Cold Lake Oil Sands Area

February 19, 2008

Published by

Alberta Energy and Utilities Board
640 – 5 Avenue SW
Calgary, Alberta
T2P 3G4

Telephone: (403) 297-8311
Fax: (403) 297-7040
E-mail: eub.infoservices@eub.ca
Web site: www.eub.ca

CONTENTS

1	Decision	1
2	Introduction.....	1
2.1	Application	1
2.2	Intervention.....	1
2.3	Hearing	2
3	Issues.....	2
4	Need for Reduced Well Spacing.....	2
4.1	Views of the Applicant.....	2
4.2	Views of the Interveners.....	3
4.3	Views of the Board.....	3
5	Potential Surface Impacts of Increased Well Density and Benefits	4
5.1	Views of the Applicant.....	4
5.2	Views of the Interveners.....	5
5.3	Views of the Board.....	6
	Appendix 1 Hearing Participants.....	8
	Figure 1 Application Area	9

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

**CANADIAN NATURAL RESOURCES LIMITED
APPLICATION TO AMEND APPROVAL NO. 6280
COLD LAKE OIL SANDS AREA**

**Decision 2008-015
Application No. 1428238**

1 DECISION

Having carefully considered all of the evidence, the Alberta Energy and Utilities Board (EUB/Board) hereby approves Application No. 1428238.

2 INTRODUCTION

2.1 Application

Canadian Natural Resources Limited (CNRL) applied to the EUB, pursuant to Section 13 of the *Oil Sands Conservation Act*, to amend Approval No. 6280, which is a primary recovery scheme for crude bitumen production from the Mannville Group. The amendments proposed include

- adding Sections 34, 35, and 36 Township 56, Range 1, West of the 4th Meridian, and Sections 1, 2, 3, 10, 11, and 12, Township 57, Range 1, West of the 4th Meridian,
- 8 hectare drilling spacing units for the added area,
- a minimum interwell distance of 100 metres (m) for the added area, and
- a project boundary buffer of 50 m.

The reduction in the drilling spacing units (i.e., “reduced well spacing”) is proposed to optimize the recovery of crude bitumen within the application area.

2.2 Intervention

The Fishing Lake Métis Settlement (FLMS) made a submission objecting to CNRL’s application on January 24, 2006, and expanded on and clarified its objection on March 6, 2006. Six of the nine sections applied for are located within the FLMS (see attached map). The FLMS submitted that approval of the application would significantly increase the number of wells located in the area and that CNRL had not made any significant attempt to mitigate the effects on cultural and traditional losses that would be sustained in the area. The FLMS was also concerned that CNRL had not complied with the Master Development Agreement relating to the existing approval. Another concern was that the mineral leases for the application were granted prior to the Métis Settlement Accord and, as a result, mineral extraction on these lands did not provide any benefits to the FLMS.

2.3 Hearing

The issues in applications for reduced spacing within an oil sands scheme are subsurface ones related to the reservoir and the number of subsurface drainage locations necessary to maximize the recovery of bitumen. Equity protection for competitive mineral rights owners is also considered. Generally, potential surface impacts and operational issues are not issues in a hearing on a scheme application, unless the applicant files in conjunction with the scheme application, well and facility applications (*Directive 056: Energy Development Applications and Schedules*). It is well and facility applications that give rise to potential site-specific impacts.

Although in the present application CNRL did not file any well or facility applications, the Board was of the view that this particular scheme application was unique for the following reasons. The proposed scheme would be situated on six sections of land that form part of the FLMS. As these lands are governed by a unique legal regime, the Board wanted to provide an opportunity to the FLMS to address the interplay between the application and the Settlement legislation. The Board wanted to hear the concerns of the FLMS about the use of the land that may result if the application were approved and to consider the manner in which these concerns related to the application.

The Board originally scheduled a hearing to commence on September 13, 2007; however, following issuance of the Notice of Hearing, the Board received a request from the FLMS to reschedule the hearing. CNRL did not object to the granting of an adjournment, and the hearing was rescheduled for October 11, 2007. A second request to reschedule the hearing was received from the FLMS on September 7, 2007. As a result of further discussions between FLMS and CNRL, an agreement to reschedule the hearing was reached. The hearing was rescheduled to November 22, 2007. On November 20, 2007, a third request to reschedule the hearing was submitted by FLMS and, following input from both CNRL and FLMS, the Board again rescheduled the hearing.

The Board held a public hearing in Edmonton, Alberta, on December 5, 2007, before Board Member T. M. McGee (Presiding Member) and Acting Board Members W. A. Warren, P.Eng., and D. A. Larder, Q.C. Those who appeared at the hearing are listed in Appendix 1.

3 ISSUES

The Board considers the following to be the issues arising from the hearing:

- the need for reduced spacing, and
- potential surface impacts of increased well density and benefits.

4 NEED FOR REDUCED WELL SPACING

4.1 Views of the Applicant

CNRL requested that the drilling spacing units for the lands in the application area be reduced from 64 to 8 hectares (ha) and submitted that approval of reduced well spacing was necessary to effectively recover the bitumen resource from the Mannville Group in the application area. It

stated that the actual well spacing needed would range from 8 to 16 ha per well, depending on the reservoir thickness and quality encountered. CNRL provided maps showing the interpretive pool boundaries in support of its position. With this spacing, CNRL expected to drill 80 to 136 wells within the application area. CNRL estimated that the bitumen recovered from the proposed development would range from 1 to 1.7 million cubic metres (m³). Without reduced spacing, CNRL argued that it could only drill up to 20 wells in the area of application, as it could drill one well in each quarter section (64 ha). With the existing spacing, CNRL estimated that ultimate bitumen recovery for the application area would be in the order of 254 000 m³.

CNRL further noted in support of its application that the lands it sought to add were adjacent to the existing primary scheme, which had approved 4 ha spacing. Also, CNRL did not want to proceed with further evaluation drilling and production without reduced spacing because of the wormhole network created by sand produced in association with primary bitumen production. It argued that the longer production occurred, the more extensive the wormhole network would become, which would present drilling risks for subsequent infill drilling required to optimize bitumen recovery.

4.2 Views of the Interveners

The FLMS stated that it understands that the application is for reduced spacing only. It did not contest CNRL's position that the reduced spacing was necessary to efficiently recover the bitumen resource from the Manville Group.

4.3 Views of the Board

When considering an application for a scheme or an amendment to a scheme under the *Oil Sands Conservation Act*, the Board is mindful of the purposes of the act. In particular, the following purposes are pertinent to this application:

- to effect conservation and prevent waste of the oil sands of Alberta, and
- to ensure the orderly, efficient, and economical development of the oil sands resources of Alberta in the public interest.

The Board has weighed the evidence and submissions on the need for reducing spacing in light of the above-mentioned purposes. The Board finds that reducing spacing would result in significant incremental recovery of the bitumen resource, based on the estimated recovery ranging from 1 to 1.7 million m³, as opposed to the estimated resource recovery of 254 000 m³ from the existing well spacing. Also, reduced well spacing has previously been approved in adjacent lands. The Board accepts the evidence of CNRL that drilling and production without reduced spacing may jeopardize the recovery of the bitumen because of the wormhole network created by sand produced in association with primary bitumen production. As explained, the longer bitumen production occurs, the more extensive the wormhole network becomes, and this presents drilling risks for subsequent infill drilling required to optimize bitumen recovery.

As a result, the Board concludes that the reduced spacing is necessary to effect conservation of the bitumen resource and furthers the orderly, efficient, and economical development of the resource.

5 POTENTIAL SURFACE IMPACTS OF INCREASED WELL DENSITY AND BENEFITS

5.1 Views of the Applicant

CNRL recognized that 6 out of the 9 sections applied for were within the FLMS lands and that these lands were used by its members for traditional and cultural purposes. CNRL submitted that surface-related concerns were best addressed at the well licence consultation or application stage, when it would have sufficient information to assess potential impacts and finalize surface locations for pad well sites, roads and any other required facilities.

CNRL stated that it was committed to working with the FLMS to minimize any surface impacts resulting from CNRL's operations. CNRL intended to achieve this, in part, by using multiwell pads where possible to limit the number of disturbed surface locations and the number of access roads. With reduced spacing approved, CNRL expected that 20 to 26 multiwell pad sites would be required to fully develop the application area. Therefore, CNRL argued that the multiwell pads would reduce the amount of land required for single-well pads by 50 per cent. CNRL acknowledged that each multiwell pad would disturb about 6 to 6½ acres, whereas a typical single-well pad was about 3 acres; however, CNRL argued this was a reasonable trade-off to optimize bitumen recovery and minimize surface disturbance.

CNRL submitted that traffic from the proposed development would replace some of the traffic reduction expected from declining production in the remainder of the Approval No. 6280 area. However, CNRL acknowledged that over a period of several years traffic would increase as a result of the proposed development. It estimated that the proposed development would require an additional 40 to 65 truckloads per day.

CNRL submitted that the reduced spacing and incremental production associated with the proposed development would provide increased opportunities for work, training, and spin-off activity for FLMS members and contractors. CNRL stated that it intended to negotiate further agreements with the FLMS regarding access, roads, and all matters incidental to the surface access required for any multiwell pad locations. CNRL emphasized that negotiations were ongoing.

CNRL argued that the real issue in the hearing was that the mineral rights to the oil sands in the application area were acquired prior to the *Métis Settlement Act* and were not subject to a co-management agreement. CNRL submitted that the Board could not change the fact that the lands in question were not subject to a co-management agreement.

In response to the issues raised by the FLMS regarding the Master Development Agreement, CNRL submitted that compliance with this agreement was a contractual matter between CNRL and the FLMS.

Also, in reply to the FLMS's request for a deferral of the decision on the application, CNRL pointed out that the application had been outstanding for two years and requested that the application for reduced well spacing be approved without any deferral to allow further negotiations between the parties.

5.2 Views of the Interveners

The FLMS explained that it was raising its concerns about potential surface impacts and operational issues regarding the subject down-spacing application because it was the first step in CNRL's plans to significantly increase development in what was currently an undeveloped area of the FLMS.

The FLMS agreed that using multiwell pad sites and accessing multiple locations from one site would result in less surface disturbance, which would be a benefit of the proposed development. However, it stated that the benefits of multiwell pad sites did not allay its concerns about the increase in development, which were twofold. First, it was concerned about the impact of increased development on lands currently available to its members for traditional and cultural uses. The members explained, in general terms, the uses that the members made of the lands—for example, hunting, fishing, berry picking, and spiritual practices. The FLMS explained that the application area was mapped for traditional uses, but other uses were not prohibited. The FLMS submitted that it had a limited land base and could not access additional lands to replace any lands disturbed by the proposed development. The FLMS added that it was seeking assurances or agreements from CNRL relating to the manner in which the impacts on the traditional and cultural uses would be mitigated prior to any approval for down-spacing being issued.

Second, the FLMS expressed concerns that the increase in production would result in increased heavy truck traffic, as all production would be trucked out. The FLMS stated that it had primary responsibility for maintenance and upkeep of its roads. The FLMS added that its roads were not designed to handle the heavy truck traffic anticipated and would require significant upgrading, for which it had limited funding. As a result, it argued that existing roads would not be able to accommodate increased traffic. Also, the FLMS had difficulties in the past in getting CNRL to pay for maintenance of the roads and did not believe that CNRL would pay for upgrading or improving the road.

There was also concern expressed about the safety of FLMS members, as CNRL already had access on the east/west road going through the settlement. These concerns resulted from truck drivers not obeying speed limits through residential areas and the width of the road. In response to questions, the FLMS stated that it had jurisdiction over the settlement roads and their use and had the authority to limit the use of its roads.

The FLMS agreed with CNRL that the mineral rights to the oil sands in the application area held by CNRL were not subject to a co-management agreement. As a result of this, the FLMS argued that the benefits from development would not outweigh the loss of traditional and cultural use in the application area. The FLMS acknowledged that the primary benefit to it from the proposed development would be employment and economic development opportunities. However, it emphasized that there was no master development agreement in place for the application area that dealt with such benefits.

In response to questions, the FLMS indicated that it understood there would be further well and facility applications and opportunities to address surface issues in the Board's application process. Also, the FLMS was aware that the Métis Settlements Appeals Tribunal had a process that could deal with access issues for the lands in question if no agreement were reached with CNRL.

In conclusion, the FLMS stated that it was not trying to stop development but did want development to occur in a manner respectful of its traditions and it wanted CNRL to address its concerns proactively. The FLMS indicated it was encouraged by CNRL's statements about further negotiations but asked that the Board defer its decision on the application pending further discussion between it and CNRL.

5.3 Views of the Board

Prior to dealing with the questions of potential impacts, the Board notes that prior to the hearing in correspondence and during the hearing, the parties referred to the application area as not being subject to a co-management agreement resulting from the *Métis Settlement Act*. However, the existence of such an agreement is irrelevant to the application before the Board. Furthermore, the parties accepted that consideration of the agreement was not within the purview of the Board. Also, compliance with or interpretation of the Master Development Agreement are contractual matters between CNRL and the FLMS and not matters that this Board is charged with determining.

In considering the evidence regarding the use of multiwell pads to mitigate surface disturbance, the Board notes that with the existing spacing CNRL can drill 20 wells with total well-site land disturbance of some 60 acres. Under the proposed reduced spacing, the land disturbance would only increase by about 115 acres for up to 136 wells. The Board is also of the opinion that multiwell pads will provide improved opportunities for gas conservation and bitumen handling through more centralized production facilities.

However, the Board cannot comment on the potential impacts of the placement of future pad sites, as such considerations are the subject of future applications or hearings. For this application, there was no evidence regarding the location of the sites and the specific impacts on the traditional uses in the vicinity of a specific site. The Board notes that CNRL submitted that it is committed to work with the FLMS in the selection of well pad sites to minimize impacts on traditional or cultural use in the application area and the party's willingness to negotiate.

Respecting FLMS concerns about road use, the Board considers that as roads in the FLMS are under the jurisdiction of the Settlement Council, that is the appropriate authority to deal with road use and safety issues. Also, the Board notes that the Master Development Agreement for Approval No. 6280 requires CNRL to pay fees for the use of the roads within the settlement and for maintenance. The parties appeared amenable to negotiating a similar agreement for the proposed development. The Board also notes that consultation between CNRL and the FLMS will continue in order to select appropriate access road locations that minimize impacts on land use by settlement members to the extent possible.

Furthermore, The Board wants to make it clear that approval of the subject reduced spacing application does not predetermine any facility licence application, including wells, for the project area. CNRL must make all facility applications, in accordance with *Directive 056*. The FLMS will have an opportunity to submit its concerns about or objections to such applications.

The Board does not deal with compensation for surface access, which was a significant topic at the hearing. As noted by the parties, the Métis Settlements Appeals Tribunal has jurisdiction in disputes regarding rights of entry and compensation relating to access to Métis Settlement lands.

The Board hopes that with further discussions between CNRL and the FLMS, the outstanding issues may be resolved.

The Board is of the view that the application is likely to result in an increase in provincial royalties due to an increase in production. Additionally, the parties expressed their willingness to negotiate a surface access agreement, which would likely be similar to the existing Master Oil Sands Agreement (also referred to as the Oil Sands Surface Access Agreement in the hearing). Such an agreement for the proposed development is expected to increase employment opportunities for the members of the FLMS, as well as fees.

After considering the FLMS's request to defer the decision on this application, the Board denies the request. The Board notes that the application was filed in November 2005 and the Board is charged with making a decision on the application.

In closing, the Board does not believe a reduced spacing application and hearing is the best process to address unresolved surface issues. As noted above, the Board adjudicates on surface impacts in the well or the facility application process.

Dated in Calgary, Alberta, on February 19, 2009.

ALBERTA ENERGY AND UTILITIES BOARD

<original signed by>

T. M. McGee
Presiding Member

<original signed by>

W. A. Warren, P.Eng.
Acting Board Member

<original signed by>

D. A. Larder, Q.C.
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives
(Abbreviations used in report)**Witnesses**

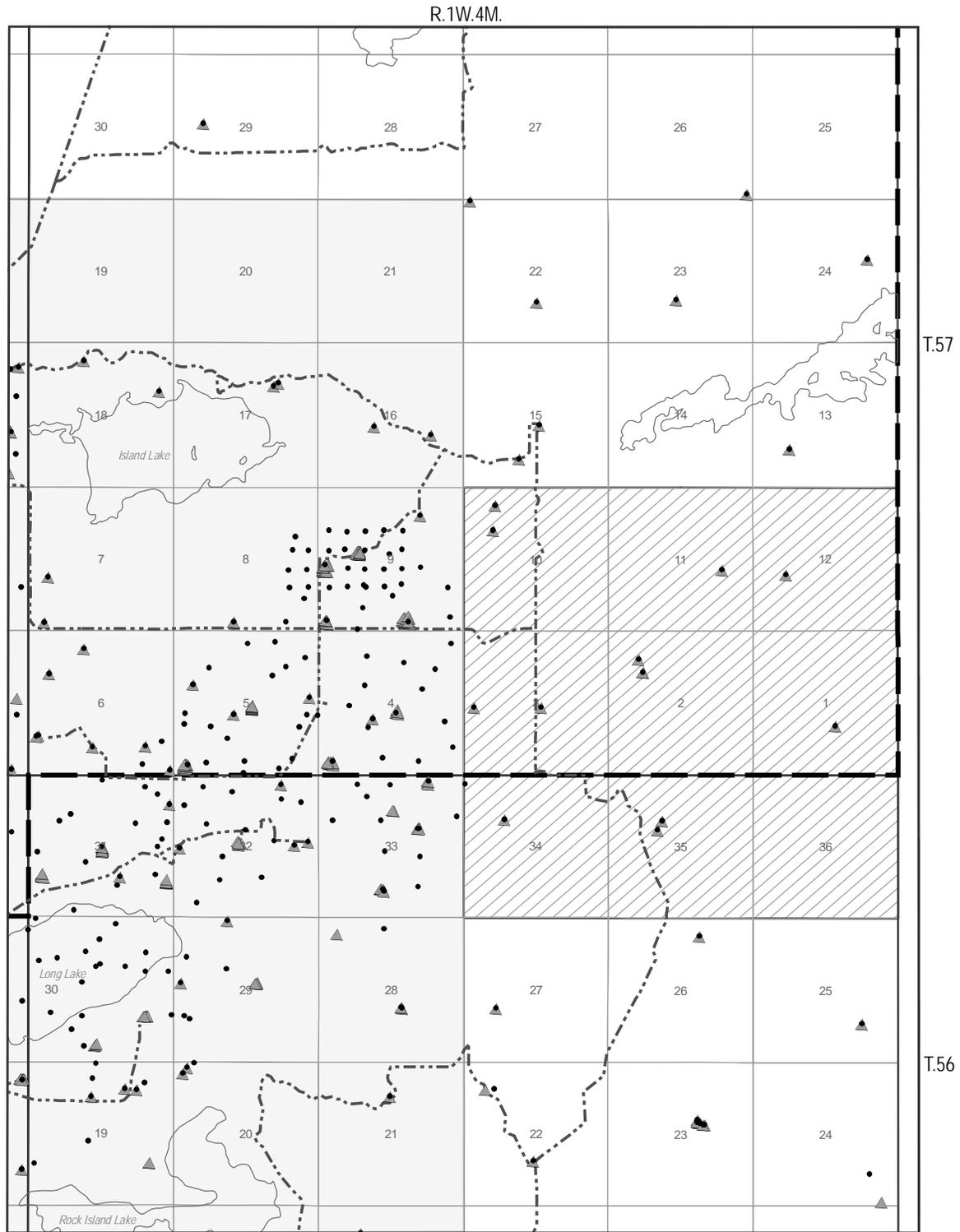
Canadian Natural Resources Limited (CNRL)
P. J. McGovern

R. Zabek, P.Eng.
B. Parker
R. Bretzlaff
C. Kinniburgh
A. Campeau

Fishing Lake Métis Settlement
J. A. Agrios, Q.C.

R. Chalifoux
J. Calliou
A. Calliou

Alberta Energy and Utilities Board staff
G. Bentivegna, Board Counsel
F. Levstik
D. Sheremata



Legend

- ▲ Well - surface location
- Well - bottomhole
- Designated road
- ▤ Fishing Lake Métis Settlement boundary
- ▨ Existing CNRL Approval No. 6280
- ▩ Application area

Figure 1. Application area