

April 30, 2010

0600-2600-59240-09

Sean Pell Exploitation Engineer Canadian Natural Resources Limited 2500, 855 – 2nd Street SW Calgary, AB T2P 4J8

Dear Mr. Pell:

RE: PRESSURE MAINTENANCE WATER FLOOD APPROVAL, AMENDMENT #3
BEATTON RIVER WEST UNIT #1 – BLUESKY "A" POOL

Commission staff have reviewed the application, dated March 10, 2010, requesting a modification of the pressure maintenance waterflood scheme approval in Beatton River West field Bluesky "A" pool, adding three units to the area and converting one additional well to water injector service.

Attached is Approval # 72-09-002 (Amendment #3). This amendment incorporates an additional water injection location at d-78-K/94-H-2 (WA# 4951) for improved waterflood sweep.

The subject Approval is independent of the Beatton River West Unit #1 Unitization Agreement. Therefore, the Pressure Maintenance Water Flood Approval area is expanded to include non-Unit locations of units 67, 68 & 78-K/94-H-2, the spacing areas of producing wells and the new injection well. The Commission is encouraged that efforts to improve oil recovery continue for this advanced life pool.

Good Engineering Practice (GEP) Approval #98-06-008, issued December 17, 1998 for a portion of the subject pool, is hereby rescinded. The subject waterflood amendment incorporates former GEP units that hold producing wells. The waterflood DOA value incorporates the additional GEP volume.

We note that recent reservoir pressure tests indicate pool pressures significantly above the original value of 7,140 kPaa, however below fracture pressure. Please ensure that pressures remain below the formation fracture pressure, as per condition #4 of the approval.

The form BC-11 "Notification of Commencement or Suspension of Operations" must be submitted to the BC Ministry of Finance to notify of conversion of a well to injection service. As well, the form BC-S18 "Monthly Injection/Disposal Statement" must be maintained for each active injection well.

Should you have any questions, please contact Ron Stefik at (250) 419-4430.

Sincerely,

Richard Slocomb, P.Eng.

Supervisor, Reservoir Engineering

Resource Conservation

Attachment

APPROVAL 72-09-002 (AMENDMENT #3)

THE PROVINCE OF BRITISH COLUMBIA PETROLEUM AND NATURAL GAS ACT OIL AND GAS COMMISSION

IN THE MATTER of a pressure maintenance scheme of Canadian Natural Resources Limited (CNRL) for waterflood recovery of oil by water injection into the Beatton River West Bluesky "A" pool, including both Unit #1 and non-Unit wells.

The approval granted pursuant to Section 100 of the <u>Petroleum and Natural Gas Act</u>, R.S.B.C. 1996, c.361 is hereby amended as follows:

The pressure maintenance scheme of CNRL for waterflood recovery of oil from the Beatton River West Bluesky "A" pool as originally approved July 7, 1972 and last modified on February 8, 1984 (Amendment #2) is hereby amended, subject to the terms herein contained:

- 1. The area of the pressure maintenance scheme consists of:
 - 94-H-2: Block K: units 30, 38-40, 46, 47, 57-59, 67, 68, 77, 78 Block L: units 3, 4, 12, 13, 21-23 and 31.
- 2. The project daily oil allowable is 206.4 m³.
- Water may be injected into the Beatton River West Bluesky "A" pool through the wells located at d-30-K, d-38-K, d-47-K, d-49-K, d-78-K, d-12-L, d-13-L and d-31-L/94-H-2
- 4. The injection pressure measured at the sandface must not exceed the formation fracture pressure.
- All associated gas will be conserved.
- 6. An oil well may be drilled anywhere within the project area provided that it is not nearer than 100 m to the sides of the project area.
- 7. The operations of the pressure maintenance scheme will be subject to periodic review and modification to the approval may be ordered, if deemed appropriate.

Richard Slocomb

Supervisor, Reservoir Engineering

Resource Conservation

DATED AT the City of Victoria, in the Province of British Columbia, this day of April 2010.