

July 21, 2009

0800-2600/4800-59070-20

James Nichols, P.Eng. Canadian Natural Resources Limited 2500, 855 – 2nd Street SW Calgary AB T2P 4J8

Dear Mr. Nichols:

RE: COMMINGLED PRODUCTION APPROVAL CNRL ET AL BEG d-068-B/094-G-01; WA# 11489

Commission staff have reviewed your application dated July 16, 2008 requesting permission to commingle gas production from the Bluesky and Halfway zones encountered in the subject well.

The Commission has designated the gas pools under application to be the Beg – Bluesky "C" and Halfway "A". The Bluesky "C" pool contains the single subject well and the Halfway "A" is a large multi-well pool.

The Halfway zone commenced production in January, 2001 at 23 10^3m^3 /d and has declined to a current rate of 8 10^3m^3 /d. The Halfway was produced up the tubing until December 3rd, 2004, when 39.1mm coil tubing was installed. The zone is currently flowing up the micro-annulus of the coil tubing but is being hindered by liquid loading as the critical rate of the micro-annulus is $10 \ 10^3 \text{m}^3$ /d. In November, 1998 the Bluesky was completed and brought on production at 78 10^3m^3 /d through the well annulus. However, production declined sharply due to liquid loading when flow rates dropped below the critical rate of 40 10^3m^3 /d for the annulus. The Bluesky zone is currently producing at ~5 10^3m^3 /d.

The current reservoir pressure of the Halfway zone is estimated to be 4400 kPaa, based on material balance analysis. As a requirement of the commingling approval, a second reservoir pressure test will be conducted for the Bluesky in order to determine the extent of the pool. Based on available data, the Bluesky and Halfway are assumed to have similar reservoir pressures. Due to the variation in H2S content between the zones (Bluesky – 75 ppm, Halfway 4.5%), a free flow check valve will be installed to allow one way gas flow from the annulus to tubing to prevent crossflow.

Commingled production through a single tubing string is expected to maximize production and reserve recovery from both zones.

Your application to commingle production from these zones is hereby granted approval, under the authority of Section 41 of the *Drilling and Production Regulation*, subject to the following conditions:

- 1. Production from the Bluesky (1228.0 1236.0 mKB) and Halfway (1587.0 1613.0 mKB) zones may be commingled.
- 2. Measurement of current reservoir pressure for the Bluesky zone must be conducted prior to commingling.

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- Gas, condensate and water production should be allocated on the Ministry of Small Business and Revenue BC S-1, BC S-2 and BC 08 forms on the basis of H₂S composition of the commingled gas stream, with bi-annual sampling until consistent results are obtained. The Commission must be notified of the results once a consistent allocation factor has been established.
- 4. This approval may be modified at a later date if deemed appropriate through a change in circumstances.

Should you have any questions, please contact the undersigned at (250) 419-4421 or Kelly Okuszko at (250) 419-4433.

Sincerely,

Richard Slocomb, P.Eng. Supervisor, Reservoir Engineering