

August 6, 2009

4700-8290-59240-15

Per Lofgren, P.Geol. Project Geologist Canadian Natural Resources Limited 2500, 855 – 2<sup>nd</sup> Street S.W. Calgary, Alberta T2P 4J8

Dear Mr. Lofgren:

RE: EXPERIMENTAL SCHEME APPROVAL

<u>HELMET FIELD – MUSKWA AND EVIE FORMATIONS</u>

Commission staff have reviewed your application dated March 15, 2009 requesting experimental scheme approval to explore and evaluate shale gas potential of the Devonian shale sequence, specifically the Muskwa and Evie formations, in the Cordova embayment within the Helmet field of northeast British Columbia.

Attached is Approval 09-15-015 granted under section 100 of the <u>Petroleum and Natural Gas Act</u>. At this time there is limited information available regarding shale gas potential in the subject area. Accordingly, the scheme is considered experimental, as it requires ongoing research as to drilling, completion and production methodology. No objections were received following the posting of a notice of your application on the OGC website.

The Approval area is smaller than requested, focused on the location of initial proposed activity. Future application for area amendment will be contingent on results and activity plans.

Please note that progress reports, as specified in item 5 of the approvals, must be submitted on an annual basis with the first one due on the first anniversary of the commencement date.

Sincerely,

Richard Slocomb, P.Eng.

Supervisor, Reservoir Engineering

Resource Conservation

Attachment

## **APPROVAL 09-15-015**

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

IN THE MATTER of the experimental scheme of Canadian Natural Resources Limited (Operator) to test the commercial viability of Devonian aged Muskwa and Evie formation shale gas in the Helmet field of NE British Columbia.

NOW THEREFORE, the Commission, pursuant to section 100 of the <u>Petroleum and Natural Gas Act</u>, R.S.B.C. 1996, c.361, hereby orders as follows:

- The experimental scheme for the exploration and development of Muskwa and Evie formation shale gas in the Helmet field, as such proposal is described in the application to the Commission received March 16, 2009 and supplemental information received July 5, 2009 is hereby approved, subject to terms and conditions herein contained.
- 2. The area of the experimental scheme consists of:

94-P-15

Block I – units 40, 50, 56-60, 66-70

Block J – units 31, 41, 51, and 61.

- 3. The gas wells within the scheme area may be produced without individual well allowable restrictions.
- 4. The requirements of Section 10 of the *Drilling and Production Regulation* are hereby waived, provided that gas wells within the project area are not completed nearer than 250 m to the sides of the approved project area.
- 5. The Operator must submit a progress report to the Commission annually. The progress report is due within 60 days after the end of each period and must contain:
  - a) the daily average rate of gas and water produced during each month for each producing well, and for the scheme as a whole,
  - b) the monthly cumulative gas and water production from each producing well, and for the scheme as a whole,
  - c) details of any workover or fracture treatment program done on any of the wells with results of the workovers or fracture treatment,
  - d) an evaluation of bottom hole pressures and any other data collected,
  - e) representative sample analysis of produced gas and water,
  - f) a discussion of the overall performance of the scheme,
  - g) any other information that is considered necessary, in the opinion of the Commission, to evaluate the progress, performance and efficiency of the scheme.

- 6. The operations of the experimental scheme will be subject to review by the Commission. The Director, Resource Conservation or the Director, Drilling and Production, or their designates, may issue guidelines regarding the operations of the scheme.
- 7. The Operator of the scheme shall complete operations as set out in the proposed program described in the application to the Commission.
- 8. This approval terminates upon approval of a production scheme by the Commission, if the Commission is satisfied that the experimental scheme is completed or no longer serves its intended purpose.
- 9. The approval or any condition of it may be modified or rescinded, if deemed appropriate.

Richard Slocomb

Supervisor, Reservoir Engineering

Resource Conservation

DATED AT the City of Victoria, in the Province of British Columbia, this 6<sup>th</sup> day of August 2009.