

May 13, 2009

4390-4900/9021-5000-59070-20

Elizabeth Isenor, E.I.T  
Production Engineer  
Shell Canada Limited  
400 – 4<sup>th</sup> Avenue SW  
CALGARY AB T2P 2H5

Dear Ms. Isenor:

**RE: COMMINGLED PRODUCTION APPROVAL  
SHELL HZ GROUNDBIRCH A08-33-078-19W6M; WA# 23667**

The OGC has reviewed your application dated February 26, 2009, requesting permission to commingle gas production from the Doig and Montney formations in the subject well.

The Commission has designated the zones under application to be part of the Groundbirch – Doig “A” and Heritage Montney “A” gas pools. The Doig “A” pool contains 53 other wells and the Heritage Montney “A” is a large regional pool containing numerous wells.

Interim approval for commingled production was granted on March 19, 2008. The subject well was completed in April 2008 and a combined sandface AOF of  $61 \times 10^3 \text{m}^3/\text{d}$  was measured for the two zones. The well commenced commingled production from both zones in April 2008 without formal commingling approval and has produced  $13.4 \times 10^6 \text{m}^3$  of gas to date.

The Commission had not been notified that the well was operating in a commingled fashion without approval until receipt of the recent application. The Commission would like to remind Shell that as per Section 41 of the *Drilling and Production Regulation*:

“An operator of a well must not complete a well, or allow a well to be completed, for commingled production from more than one pool or zone unless the operator first applies for and receives permission in writing from an authorized commission employee”.

Although the pressure test conducted on the Doig/Montney formation in Groudbirch A08-33-78-19 W6M was inconclusive, there is a good correlation between pressure vs. depth within the Groundbirch Doig/Montney. The Doig initial reservoir pressure was estimated to be 29600 KPa and the Montney initial reservoir pressure was estimated to be 35500 KPa. The Doig zone contains 0.3% H<sub>2</sub>S (based on gas analyses from offset wells; 15-33-78-19, 16-33-78-19, 8-33-78-19 within the “A” pool), and the Montney contains 0% H<sub>2</sub>S. The commingled gas H<sub>2</sub>S is 0.06% (based on the gas analysis in March and April, 2009). There is no risk of sour Doig gas contaminating the sweet Montney gas, as the Doig has a lower reservoir pressure, so commingling is considered appropriate.

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

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May 13, 2009

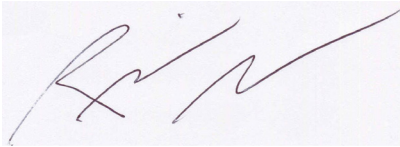
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We wish to advise you that your application to commingle production is hereby approved, under the authority of Section 41 of the *Drilling and Production Regulation*, subject to the following conditions:

1. Production from the Doig (2392.0 – 2393.0 mKB) and Montney (2695.0 – 4571.5 mKB) may be commingled.
2. Gas, condensate and water production should be allocated on the Ministry of Finance BC S-1, BC S-2 and BC-08 forms on the basis of Doig 20% and Montney 80%.
3. 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) 952-0366 or Kelly Okuszko at (250) 952-0325.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Slocomb', is written over a light blue rectangular background.

Richard Slocomb, P. Eng.  
Supervisor, Reservoir Engineering