

November 4, 2009

4390-4900/5000-59070-20

Rafael Linares Reservoir Engineer Shell Canada Upstream 1603, 202 – 6<sup>th</sup> Avenue SW Calgary AB T2P 2R9

Dear Mr. Linares:

## RE: COMMINGLED PRODUCTION APPROVAL SHELL ET AL GROUNDBIRCH 16-35-78-21W6; WA# 23676

The OGC has reviewed your application dated August 12<sup>th</sup>, 2009 requesting approval 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 "J" (2648.0 – 2653.0 mKB), Doig "K" (2707.0 – 2712.0 mKB), Doig Phosphate Beds "E" (2748.0 – 2753.0 mKB) and Heritage - Montney "A" (2806.0 – 2961.0 mKB) gas pools.

All subject zones were completed in August of 2009. Within the Montney, four intervals were tested and had a combined final test rate of  $33.3 \ 10^3 \text{m}^3/\text{d}$ . The 3 Doig intervals were completed and tested individually and had final test rates of 2.4  $10^3 \text{m}^3/\text{d}$ , 61.6  $10^3 \text{m}^3/\text{d}$ , and 24.4  $10^3 \text{m}^3/\text{d}$  respectively. Initial pressures were measured with FRT tests and all the zones contained sweet gas.

Due to the lack of well control and production in the area, commingling of all four zones/pools is considered premature. The Commission would like to see the Doig "J" and Doig "K" pools produced segregated from the Doig Phosphates Beds "E" and Montney, until the production decline and reserves potential are better understood. Shell may reapply for commingling at a later data once more technical data has been gathered from the Doig/Montney zones in the subject well and the other Doig/Montney zones in offsetting wells.

We wish to advise you that your application to commingled production 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 Doig "J" (2648.0 2653.0 mKB) and Doig "K" (2707.0 2712.0 mKB) zones may be commingled.
- 2. Production from the Doig Phosphate Beds "E" (2748.0 2753.0 mKB) and Montney "A" (2806.0 2961.0 mKB) zones may be commingled.
- Gas, condensate and water production from the commingled well should be allocated on the Ministry of Finance BC S-1, BC S-2 and BC-08 forms on the basis of Doig "J" 5% and Doig "K" 95%, and Doig Phosphate Beds "E" 40% and Montney "A" 60% respectively. The allocation factors may be amended to reflect results of any future tests.
- 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 Travis Mercure at (250) 419-4448.

Sincerely,

Richard Slocomb, P. Eng. Supervisor, Reservoir Engineering

Cc: David Langille, Shell Canada

Resource Conservation 300 – 398 Harbour Rd. Victoria BC V9A 0B7 MAILING PO BOX 9329 Stn Prov Govt Victoria BC V8W 9N3

**T 250.419-4400** F 250.419-4402

www.ogc.gov.bc.ca