

September 11, 2019

1260-4100-32640-60

Lynn Wood, P.Eng.
Exploitation Engineer
Canadian Natural Resources Limited
Suite 2100, 885 – 2nd Street SW
Calgary, Alberta, T2P 4J8

Dear Ms. Wood,

**RE: OBSERVATION WELL STATUS APPROVAL
CNRL ENERMARK HZ BIRCH d-A9-I/94-A-13 (WA 8244)
BIRCH – BALDONNEL C**

BC Oil and Gas Commission (Commission) staff have reviewed the July 23, 2019 application from Canadian Natural Resources Limited (CNRL) seeking observation well designation for CNRL Enermark HZ Birch d-A9-I/94-A-13 (WA 8244).

The Drilling and Production Regulation Part 1 defines an observation well as “a well or a portion of a well designated as an observation well under section 2 (7)”.

- 2 (7) An official may designate a well as an observation well if
- (a) the well is being used to monitor reservoir pressures or to obtain other formation information, and
 - (b) the well is not used to produce from, or inject or dispose of fluids into, a formation being monitored.

The subject well was drilled in 1993 and the Baldonnel formation was completed for the purpose of oil production; producing until December 2012. A waterflood pressure maintenance project was approved for the Birch field, Baldonnel C pool in September 2009. The subject well was active as a water injector from March 2013 until November 2018. Reservoir performance in the Baldonnel ‘C’ pool shows high compartmentalization and significant pressure variation between wells. The most recent reservoir pressure measured in the well was higher than the initial pool pressure.

CNRL is requesting use of this well to monitor reservoir pressure in the Birch Baldonnel ‘C’ pool to understand the pressure dissipation in the pool as it equalizes. CNRL is proposing annual reservoir pressure testing be completed in the pool.

Approval of observation status is granted for CNRL Enermark HZ Birch d-A9-I/94-A-13, for the Baldonnel ‘C’ pool, with the following requirement;

- conduct a reservoir pressure test annually using downhole recorders.

Please be reminded that all reservoir pressure tests conducted must be submitted to the Commission within sixty days of the date on which the pressure was measured.

Should you have any questions, please contact Kathryn Archibald at (250) 419-4406 or the undersigned at (250) 419-4430.

Sincerely,



Ron Stefik, Eng. L.
Supervisor, Reservoir Engineering
Oil and Gas Commission