

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 ET AL HZ BIRCH a-96-H/94-A-13 (WA 8157)
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 et al HZ Birch a-96-H/94-A-13 (WA 8157).

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 has two drilling events, completed in 1993 and 1994, both in the Baldonnel formation; neither event has reported production. The Birch field, Baldonnel ‘C’ pool began production in 1971 and a waterflood pressure maintenance project was approved in September 2009. The subject well was active as a water injector from January 2013 until September 2018. Reservoir performance in the Baldonnel ‘C’ pool shows high compartmentalization and significant pressure variation between wells. An acoustic well sounder completed in August 2019 calculates a reservoir pressure in the well above the initial pressure of the pool.

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 et al HZ Birch a-96-H/94-A-13 (WA 8157), 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