

December 2, 2020

2960-4520-59240-09

Lynn Wood  
Exploitation Engineer – BC North  
Canadian Natural Resources Limited  
2100, 855 – 2nd St SW  
Calgary, AB T2P 4J8

Dear Ms. Wood:

**RE: PRESSURE MAINTENANCE GAS INJECTION ORDER 89-13-002 AMENDMENT #5  
CECIL LAKE FIELD – CECIL ‘D’ POOL**

The Commission is presently reviewing and amending pressure maintenance gas injection approvals to conform to current requirements. The continued operation of a pressure maintenance waterflood in the Cecil Lake field – Cecil ‘D’ pool by Canadian Natural Resources Limited (CNRL) requires this review.

The pool discovery well, CNRL Cecil 6-6-85-17 (WA 3806), was drilled and began oil production in November of 1976. Two additional wells were drilled in the late 70s, four more in the 80s, two more in the 90s, and finally three in the early 2000s. Approval for gas reinjection was granted on September 13, 1989 and injection began later that month in the well CNRL Cecil 6-6-85-17 (WA 3806). The approval was amended in 1994, 2002 and 2003, adding addition project area, projects wells, and altering the daily oil allowable. Of the twelve wells in the pool, currently five are active oil producers, one is an active gas injection well, and the remainder either abandoned or suspended.

The following Orders are attached;

- 1) Order 89-13-002 Amendment #5 designating Pressure Maintenance Gas Injection within the Cecil Lake field – Cecil ‘D’ pool, as a Special Project under section 75 of the *Oil and Gas Activities Act*, and
- 2) Order 89-13-002 Amendment #5 - OTN approving Other Than Normal Spacing under section 65.1 of the *Petroleum and Natural Gas Act* for the subject area and formation.

This amended approval includes a maximum wellhead injection pressure (MWHIP) and a requirement for reservoir pressure tests. As the pool is overdue for reservoir pressure testing, condition 2d) imposes a requirement to obtain a reservoir pressure prior to April 1<sup>st</sup>, 2021.

Please note that, as per section 75 of the *Drilling and Production Regulation*, a record of the volume of gas injected and the MWHIP must be included on a Monthly Injection statement to the Commission via Petrinex not later than 20<sup>th</sup> day of the month following the reported month.

Should you have any questions, please contact Logan Gray at (250) 419-4465 or the undersigned at (250) 419-4430.

Sincerely,



Ron Stefik, EngL  
Supervisor, Reservoir Engineering  
Oil and Gas Commission

Attachments

**ORDER 89-13-002 – Amendment #5**

1. Under Section 75 (1) (a) of the *Oil and Gas Activities Act*, the Commission designates by Order the development and production of petroleum and natural gas from a pool using pressure maintenance gas injection enhanced recovery scheme within the Cecil Lake field – Cecil ‘D’ pool following area;

DLS	Twp 85 Rge 17:	Section 6, W/2 and NE/4 of section 7
	Twp 85 Rge 18:	E/2 of section 1 and E/2 of section 12

2. Under section 75(2) of the *Oil and Gas Activities Act*, the special project designation in this Order is subject to the following conditions:
  - a) The project unadjusted daily oil allowable (UDOAA) is 95.7 m<sup>3</sup>.
  - b) All associated produced gas must be conserved.
  - c) Gas may be injected into the well CNRL Cecil 6-6-85-17 (WA 3806), interval 1,260.6-1,263.0 mKB:
    - i) Inject only through tubing with a packer set as near as is practical above the injection interval.
    - ii) Not exceed an injection pressure, measured at the wellhead of 23,250 kPa or the pressure required to fracture the formation, whichever is lesser.
  - d) A reservoir pressure must be obtained from the pool before April 1<sup>st</sup>, 2021 and then at least once every two calendar years, and submitted to the Commission within 60 days via e-submission.
  - e) Cease injection for the well listed in (c) and notify the Commission at Reservoir@BCOGC.ca immediately if hydraulic isolation is lost in the wellbore or formation.
  - f) Include the monthly injected volume, injection hours and the maximum injection pressure value for the well listed in (c) via Petrinex.
  - g) Injection must cease upon termination of production from the pool.

Advisory Guidance for 89-13-002 – Amendment #5

- I. Packer isolation tests conducted must be submitted, as per section 16(3) of the Drilling and Production Regulation.
- II. Injected gas must be metered and the injection pressure measured at the wellhead, as per section 74 of the Drilling and Production Regulation.
- III. A monthly injection statement must be submitted to Petrinex not later than the 20<sup>th</sup> day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.
- IV. Seismic events must be reported and injection operations suspended as per section 21.1 of the Drilling and Production Regulation.



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

DATED AT the City of Victoria, in the Province of British Columbia, this 2<sup>nd</sup> day of December 2020.



**ORDER 89-13-002 – Amendment #5 – OTN**

- 1 Under Section 65.1(2) of the *Petroleum and Natural Gas Act*, Other Than Normal Spacing within the Cecil Lake field – Cecil 'D' pool is hereby approved within the following area;

DLS	Twp 85 Rge 17:	Section 6, W/2 and NE/4 of section 7
	Twp 85 Rge 18:	E/2 of section 1 and E/2 of section 12

- 2 Under section 65.1(3) of the *Petroleum and Natural Gas Act*, I specify the following:
- a) the target area for an oil well completed within the project area is not nearer than 100 m to the sides of the Other Than Normal Spacing area,
  - b) an oil well completed outside the specified target area may be subject to an off-target production penalty,
  - c) oil wells drilled within the specified project area are not subject to spacing requirements.

A handwritten signature in blue ink, appearing to read 'R. Stefik'.

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

DATED AT the City of Victoria, in the Province of British Columbia, this 2<sup>nd</sup> day of December 2020.