

Ryan Munro, P.Eng.
Manager, Abandonment Engineering
Canadian Natural Resources Ltd.
Suite 2100, 8800 – 2ST SW
CALGARY AB T2P 4J8

May 13, 2020

Dear Ryan Munro:

Letter of Decision: ACW-2019-011-CNRL-P-16-WID1976

On February 28, 2020, the Office of the Regulator of Oil and Gas Operations (OROGO) received an electronic copy of a Well Approval application from Canadian Natural Resources Ltd. (CNRL) to Alter the Condition of a Well (ACW) for the abandonment of the Liard P-16 (WID 1976) well.

CNRL also filed additional information with OROGO in response to Information Request No. 1, received on April 29, 2020.

The Regulator, designated under section 121 of the *Oil and Gas Operations Act* (OGOA), may issue a Well Approval under section 10(4) of that act. The Regulator has delegated the power to issue authorizations under section 10(4) of OGOA to me, in accordance with section 8 of that act.

I have reviewed CNRL's description of its proposed activity and find that the application demonstrates that this activity will be conducted safely, without waste and without pollution, in compliance with the *Oil and Gas Drilling and Production Regulations*. However, Section 6A - Downhole Abandonment Requirements of the *Well Suspension and Abandonment Guidelines and Interpretation Notes* (Guidelines) requires the setting of a permanent bridge plug within 15 meters above a single zone open-hole section or perforations. Step 31 of CNRL's abandonment program proposes the setting of a permanent bridge plug at 2964 mKB which would result in placement of the plug at a height greater than the required 15 meters above the single zone open hole section for the abandonment of the Nahanni zone.

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Therefore, CNRL's application is approved, subject to the terms contained in the attached Well Approval and I also approve an exemption to the Guidelines to allow for the setting of a permanent bridge plug at a depth of 2964 mKB in order to abandon the Nahanni zone as noted in Step 31 of the abandonment program.

CNRL must post a copy of the attached Well Approval in a clearly visible location at the work site.

Sincerely,



Pauline de Jong
Chief Conservation Officer

Encl. ACW-2019-011-CNRL-P-16-WID1976

- c. James Ireland, Well Abandonment Engineer, CNRL
Arly Castillo, Regulatory Coordinator, CNRL

WELL APPROVAL

Subject to the terms listed below, a well approval is granted under Section 10 of the *Oil and Gas Operations Act* and Part 2 of the *Oil and Gas Drilling and Production Regulations* to


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| Company Name Canadian Natural Resources Limited | Company Operating Licence # NWT-OL-2014-001 |
| Responsible Officer and Title Ryan Munro, Manager, Abandonment Engineering | |

to proceed with the works and activities described in its February 28, 2020 application and subsequent submissions for

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|--|-------------------------------------|
| Type of Work Well abandonment | Settlement Area or Region Dehcho |
| Scope of Work Abandonment of the Liard P-16 Well (WID 1976) | |

This approval is granted under Operations Authorization OA-2018-005-CNRL and expires on April 1, 2021.

Dated at Yellowknife, Northwest Territories on May 13, 2020.

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| Name of Regulator / Delegate Ms. Pauline de Jong | Signature of Regulator / Delegate  |
| Title Chief Conservation Officer | |

ADDITIONAL TERMS

1. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with the requirements of the *Oil and Gas Operations Act* and the *Oil and Gas Drilling and Production Regulations*, as well as any other acts or legislation as may apply.
2. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with any guidelines and/or interpretation notes issued by the Regulator under section 18 of the *Oil and Gas Operations Act*.
3. Canadian Natural Resources Limited is granted an exception from section 6A, Downhole Abandonment Requirements of the *Well Suspension and Abandonment Guidelines and Interpretation Notes* to allow for the setting of a permanent bridge plug at a depth of 2964 mKB in order to abandon the Nahanni zone as noted in Step 31 of the approved abandonment program.
4. Canadian Natural Resources Limited shall cause the approved work and activities to be conducted in accordance with the specifications, standards and other information referred to in its application received February 28, 2020 and subsequent submissions.
5. Canadian Natural Resources Limited shall request approval from the Chief Conservation Officer prior to undertaking any change to or deviation from the authorized work or activities, including but not limited to key personnel, the safety plan, the environmental protection plan, contingency plans and the approved abandonment program.
6. Canadian Natural Resources Limited shall provide all staff and contractors for this program with its Emergency Response Plan and the OROGO 24-hour Incident Reporting phone number (867-445-8551) prior to commencing any work or activity.
7. Canadian Natural Resources Limited shall notify OROGO at least 10 days prior to the start of well abandonment operations.
8. Canadian Natural Resources Limited shall submit to OROGO certificates and inspection documents for any service rig, well control and associated equipment (including boilers) at least 10 days prior to the rig commencing work.

9. Canadian Natural Resources Limited shall submit to OROGO an updated operator contact list for this program prior to any work or activity.
10. Canadian Natural Resources Limited shall submit to OROGO a completed Change of Well Status form 30 days after the service rig release date or when the operation has been successfully completed.
11. Pursuant to section 67 of the *Oil and Gas Drilling and Production Regulations*, Canadian Natural Resources Limited is approved to conduct controlled flaring utilizing separator packages and/or flare stacks as part of well kill operations at a maximum daily flow rate of 30×10^3 m³/day and maximum daily duration of 4.0 hours per day. CNRL is also approved to conduct controlled venting of sweet gas as part of well kill operations at a maximum daily flow rate of 900 m³/day and maximum daily duration of 4.0 hours per day. CNRL shall include the volume and composition of any amount of flared and/or vented gas in its daily report to OROGO. Flaring and/or venting of any volume, daily volume rate and/or duration greater than the approved maximum daily flow shall be reported to OROGO as an incident under section 75 of the *Oil and Gas Drilling and Production Regulations*.