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

March 27, 2020

Dear Ryan Munro:

**Information Request No.1:**
**Application to Alter the Condition of a Well for the Abandonment of the Netla K-77 well (ACW-2019-009-CNRL-K-77-WID1862)**

On February 27, 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 Netla K-77 (WID 1862) well. In order to review CNRL's application, OROGO requires additional information, as set out in the attached Information Request No.1.

Please send your written responses and any associated correspondence to me by email at orogo@gov.nt.ca or through OROGO's secure file transfer site.

Please submit your response on or before 4:00 p.m. on April 30, 2020. If you are unable to respond within this timeframe or have any questions, please contact me at (867)767-9097 or by email at orogo@gov.nt.ca.

Sincerely,

Janpeter Lennie-Misgeld
Senior Advisor, Legislation and Policy

c. Arly Castillo, Regulatory Coordinator, CNRL

**Canadian Natural Resources Ltd. (CNRL)**
**Application to Alter the Condition of a Well (ACW-2019-009-CNRL-K-77-WID1862)**
**Information Request No. 1**

## 1.1 Detailed Operations Program

**Preamble:** Step 17 states "…*Pressure test pumping surface lines to the max well head working pressure (be sure not to exceed the MAWP of the lowest rated inline component)".* All inline components should NOT be rated less than any proposed pressure test. Pressure testing is typically conducted to the well head pressure rating or formation pressure, whichever is the lesser.

Step 21 states "*Unseat hanger and release ON/OFF overshot from double grip packer. Monitor well response. Kill well as required."* This process step does not provide sufficient detailed procedural steps to determine how CNRL proposes to kill the well.

Step 22 states *"Confirm with Abandonment Superintendent if a scraper run is required based on well conditions."* This process step does not provide sufficient detail to determine how CNRL would ensure that the internal surface of the casing is free of debris and/or scaling if a scraper run is NOT completed before installing the bridge plug.

Step 32 states *"…Cap bridge plug with minimum 30 vertical metres (620 litres) of cement circulated into place with fresh water*". This process step does not provide sufficient detail to determine the method(s) to be used for the preparation, introduction and circulation of the cement when placing the required 30 metres of circulated cement.

**Request:** Please submit an updated abandonment program that provides sufficient detail to determine how CNRL proposes to:

1) Safely conduct pressure testing of pumping surface lines as stated in Step 17;

2) Kill the well as stated in Step 21;

3) Ensure that the internal surface of the casing is free of debris and/or scaling if a scraper run is NOT completed before installing the bridge plug as stated in Step 22; and

4) Prepare, introduce and circulate the cement when placing the required 30 metres of circulated cement as stated in Step 32.

## 1.2 Flaring and Venting

**Preamble:** The Netla K-77 well has reported the presence of a surface casing vent flow (2017 Well Inspection Report – flow rate = 0.27m3/day, stabilized build up pressure = 1293kPa). Steps 18 and 20 of the well abandonment program indicate the requirement to bleed off the pressure. The well abandonment program, however, does not appear to anticipate or document the procedures for flaring or venting when bleeding off pressure from the well bore. Section 67(a) of the *Oil and Gas Drilling and Production Regulations* (OGDPR) states that no operator shall flare or vent gas unless "it is otherwise permitted in the approval…"

**Request:** Please provide an explanation how the well abandonment operations will be conducted without the need to flare or vent or provide an updated abandonment program that includes procedures for safely flaring or venting the well along with estimates of the rate, quantity and period of flaring or venting that may be required.