



April 15, 2015

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Florin Hategan, P. Eng.  
Exploitation Engineer  
Canadian Natural Resources Ltd.  
Suite 2100, 855 - 2<sup>nd</sup> Street S.W.  
Calgary, Alberta T2P 4J8

Dear Mr. Hategan:

**RE: GRAHAM AREA DISPOSAL WELLS**  
**CNRL ET AL GRAHAM d-6-C/94-B-09; WA #8093**  
**CNRL ET AL GRAHAM d-A6-C/94-B-09; WA #12191**

The Commission has reviewed your letter dated April 7, 2015, proposing a schedule of operations for the subject wells, in response to a letter from the Commission dated April 1, 2015, seeking a definitive plan to address ongoing induced seismicity.

The well d-6-C was the subject of a pre-application disposal suitability review, resulting in a letter from the Commission dated November 21, 2014 indicating a favourable disposal zone, the partially depleted Baldonnel "A" gas pool having demonstrated fluid containment. The proposal to complete testing on the well d-6-C will ensure suitability for disposal into the Baldonnel, including conducting any required remedial work.

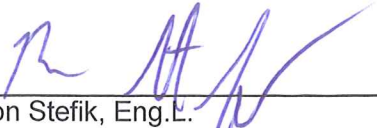
The Commission is in the process of issuing amended approval Orders for all active disposal wells, to bring into alignment with current disposal standards as outlined in the OGC "Water Service Well Summary" located at <http://www.bcogc.ca/node/5997/download>. Amended Orders require demonstrated wellbore and formation integrity and are conditional to specific monitoring, measurement and reporting requirements. Disposal is limited by a maximum reservoir pressure value. The ultimate reservoir pressure limit for the well d-A6-C is calculated to be 30,140 kPa. A previous test on this well, September 2013, exceeded this value. With continued disposal it is anticipated that the current pressure is now higher.

In addition, ongoing induced seismicity related to disposal at the well d-A6-C is of concern to the Commission, indicating a lack of fluid containment and the potential for events of a safety and environmental concern.

The Commission appreciates the need for area disposal, to support the economic recovery of gas reserves, and has worked in a collaborative manner to facilitate the identification and commencement of an alternative disposal location. The well CNRL et al Graham d-A6-C/94-B-09; WA #12191 has reached the end of operational life as a viable disposal well in the Debolt formation. Safety and environmental considerations require disposal at WA #12191 to terminate on or before July 1, 2015. Continued monitoring of area seismic activity will be required.

Should you have any questions, please contact the Ron Stefik at (250) 419-4430 or Michelle Gaucher at (250) 419-4482.

Sincerely,

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