



July 17, 1996

Ref: 960686

File: 7600-4520-59240-07

CNRL Project (03)

Mr. E. P. Vigneau, P. Eng.
Exploitation Engineer
Canadian Natural Resources Limited
2000, 425 - 1st Street SW
Calgary AB T2P 3L8

Dear Mr. Vigneau:

**RE: APPROVAL FOR CONCURRENT PRODUCTION
RIGEL CECIL "D" POOL**

This refers to your application of June 13, 1996 requesting that the pressure maintenance approval (Approval 96-09-001) be rescinded and that a Good Engineering Practice (GEP) scheme be approved for the subject pool.

Based on the injectivity results, it is concluded that the proposed water injection well c-18-A/94-A-15 is not in communication with the two oil wells in the subject pool. Therefore, as requested, the **waterflood approval #96-09-001** of April 16, 1996 granted under section 116 of the Petroleum and Natural Gas Act is hereby **rescinded**.

With respect to your request of a GEP approval, we wish to advise that a concurrent production and not a GEP approval is justified in this case. Therefore, attached is a concurrent production scheme approval for the subject pool.

The Approval 96-07-006 is hereby granted under section 113 of the *Petroleum and Natural Gas Act*.

.../2

Mr. E. P. Vigneau
July 17, 1996
Page 2

It should be noted that there are no equity concerns at this time. However, the project allowables may be revised downward if an oil well outside the project area is completed in the subject pool by another operator.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "Bou van Oort".

Bou van Oort
Director
Engineering and Operations Branch

Attachment

APPROVAL 96-07-006

THE PROVINCE OF BRITISH COLUMBIA
PETROLEUM AND NATURAL GAS ACT
MINISTRY OF EMPLOYMENT AND INVESTMENT
ENERGY AND MINERALS DIVISION

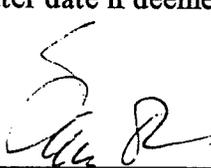
IN THE MATTER of a Concurrent Production proposal of Canadian Natural Resources Limited (CNRL) for producing the Rigel Cecil "D" Pool with a project oil and gas allowable.

NOW, THEREFORE, the Division Head, pursuant to section 113 of the *Petroleum and Natural Gas Act (the Act)*, hereby approves the Concurrent Production project of CNRL for oil and gas production with project allowables, as such project is described in

an Application from CNRL to the Division dated June 13, 1996, and related submission.

This project is approved, subject to the conditions herein contained and, in particular:

1. The area of the project shall consist of units 27, 28, 36, 37, 46, and 47 of Block A/94-A-15.
2. The project oil allowable is 40 m³/d.
3. Gas production from the project will be limited to 28 10³m³ /d.
4. All associated gas production will be conserved.
5. Approval 96-09-001 granted under section 116 of *the Act* is rescinded.
6. This approval may be modified or rescinded at a later date if deemed appropriate.



Bou van Oort, on behalf
of the Division Head
Energy and Minerals Division

DATED AT the City of Victoria, in the Province of British Columbia, this 17th day of July, 1996.

To: File

Date: July 12, 1996

From: Peter S. Attariwala

**Re: CONCURRENT PRODUCTION APPROVAL
RIGEL - CECIL 'D' POOL**

REFERENCE IS MADE TO THE INFORMATION BRIEFING NOTE FOR DOUGLAS ALLEN DATED MARCH 28, 1996 FOR APPROVAL OF A WATERFLOOD SCHEME-- COPY ATTACHED.

This note to file refers to CNRL's request of June 13, 1996 for rescinding the Pressure Maintenance Approval and requesting approval of an Application for Good Engineering Practice in the subject pool.

A review of the pressure and water injectivity data of the well c-18-A/94-A-15 confirms that this well is not in communication with the other two oil wells in the pool, namely c-27-A and a-28-A/94-A-15. The pool without this proposed injector is too small for waterflooding. In view of this, CNRL's request for rescinding the waterflood scheme is justified. The gas well d-37-A/94-A-15 is in poor communication with the oil wells.

As the Rigel Cecil "D" pool is very small, CNRL's request for GEP is justified. However, as CNRL is requesting GOR relaxation with produced gas being conserved for sales, the application should be approved as CONCURRENT PRODUCTION and not GEP. There are royalty implications; Concurrent Production gas is treated as conservation gas and pays higher gas royalty. The gascap well d-37-A is the "discovery well", therefore no oil royalty exemption.

In view of the above, CNRL's request should be approved as a concurrent production scheme. The area of the concurrent production approval is unit 27,28,36,37,46 and 47 Block A/94-A-15. This includes the two oil spacings and a full GSU with the gas cap well.

There are no correlative issues. Since we need to encourage oil production, the sum of well capability of 38 m³/d for the scheme should be approved. However, we cannot waive GOR's as requested by CNRL as this could result in loss of oil recovery from the pool. Reserves based gas allowable for gas cap and solution gas calculates to be 20.5 e³m³/d. However, to allow unpenalized oil production with some gas cap production, approve gas limit of 28 e³m³/d and oil allowable of 40 m³/d for the scheme. These allowable rates may be lowered to actual reserves based figures if future drilling resulted in equity being a concern.

This approval is contingent on all produced gas being conserved.