



December 14, 2000

0400-4800-59240-07
OGC 000282

Mr. David Cronkhite, P.Eng.
Chief Production Engineer
Encal Energy Ltd.
1800, 421 - 7th Ave S.W.
Calgary AB T2P 4K9

Encal Project (03)

Dear Mr. Cronkhite:

**RE: CONCURRENT PRODUCTION APPROVAL, AMENDMENT #2
BEATTON RIVER HALFWAY "B" OIL POOL**

Attached is a Concurrent Production scheme approval amendment for the subject pool, as requested in your application dated November 23, 2000.

The Approval 85-07-004 (Amendment #2) is hereby granted under section 97 of the Petroleum and Natural Gas Act. The project area has been amended to include units 40-J and 31-K/94-H-2.

As noted in your application, a pooling agreement must be registered with the Petroleum Lands Branch of the Ministry of Energy and Mines before the gascap well d-31-K/94-H-2 may be produced. Please note that the project allowables may be amended if another operator successfully completes an oil well outside the project area in the subject pool.

Sincerely,

Craig Gibson, P. Eng.
Manager
Reservoir Engineering and Geology

Attachment

Approval Letters to Industry
GEP, SWD, CONCURRENT PROD,
PRESSURE MAINTENANCE,
WATERFLOOD, ETC.

Copy 10

- Wellfile (originals)
- 59240
- Daily
- Resource Revenue
- S. Chicorelli
- R. Stefik
- G. Farr
- P. Attariwala
- D. Krezanoski

ENGINEERING AND GEOLOGY BRANCH

PO Box 9329 Stn Prov Gov't, Victoria BC V8W 9N3 Tel: (250) 952-0302 Fax: (250) 952-0291
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APPROVAL 85-07-004 (Amendment #2)

**THE PROVINCE OF BRITISH COLUMBIA
PETROLEUM AND NATURAL GAS ACT
OIL AND GAS COMMISSION**

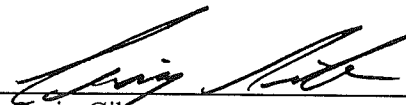
IN THE MATTER of a Concurrent Production scheme of Encal Energy Ltd. (Encal) for producing the Beatton River Halfway "B" pool with a project oil and gas allowable.

NOW, THEREFORE, the Commission, pursuant to section 97 of the Petroleum and Natural Gas Act, hereby amends the Concurrent Production scheme of Encal for oil and gas production with project allowables, as such scheme is described in

an Application from Encal to the Commission dated November 23, 2000 and related submission.

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

1. The area of the scheme shall consist of units 40, 50, 59, 60 of Block J and units 31, 41 and 51 of Block K/94-H-2.
2. The project oil allowable is 10.0 m³/d.
3. The project gas allowable is 60.0 e³m³/d.
4. All produced gas must be conserved.
5. The requirements of section 9 of the *Drilling and Production Regulation* are hereby waived, provided that oil wells within the scheme area are not completed nearer than 100 m to the sides of the approved area.
6. This approval may be modified or rescinded at a later date if deemed appropriate.



Craig Gibson
Manager
Reservoir Engineering and Geology

DATED AT the City of Victoria, in the Province of British Columbia, this 18th day of December, 2000.

**MEMORANDUM**

December 11, 2000

File: 0400-4800-59240-07

**RE: CONCURRENT PRODUCTION APPROVAL, AMENDMENT #2
BEATTON RIVER HALFWAY "B"**

Production from this pool began in 1962, from the well d-41-K/94-H-2. Development wells have intersected only gascap pay. In 1985 a single well GEP was approved for the oil well, with GOR relief (gas flared). In 1989 a Concurrent Production scheme was approved, gascap well c-59-J/94-H-2 being allowed to produce, gas gathered. Production allowables issued were the minimum values of 10.0 m³/d oil and 60.0 e³m³/d gas.

d-41-K initial oil rates of 8 m³/d have since declined to a present 1.0 m³/d. During that same period the GOR has undergone a rise and fall, to a high of 4,000 m³/m³, now back down to close to the original value of 500 m³/m³.

c-59-J gascap well has declined from 60 e³m³/d in 1990 to a present rate of 9 e³m³/d.

The Halfway "B" pool is separated from the adjoining "A" pool (also operated by Encal) by a sealing fault, the "A" pool has been under waterflood since 1963.

Encal has applied to expand the Concurrent Production approval, in order to produce a second gascap well at d-31-K. This well tested gas at 23 e³m³/d following acidization in 1984.

Conservation

Solution gas gathering has been occurring since 1990.

N_p of 15,541 m³ is 16.3% of OGC booked OOIP. Reservoir pressure declines are not consistent across the pool (possible influence from "A" pool waterflood?) however the two producing wells indicate a low current pressure of 1100 kPa, the proposed tie-in well 31-K tested in November 2000 at 5,614 kPa! Reservoir energy loss due to increased gascap production should not harm ultimate oil recovery, based on low present oil rate.

Equity

The inclusion of units 40-J and 31-K/94-H-2 would incorporate the complete gas spacing area for the well 31-K within the project. However, as noted in the application from Encal, a pooling agreement is necessary in order to produce d-31-K, as CNRL has a 20% interest in unit 41-K. To-date the pooling agreement has **not** been registered with the MEM Petroleum Lands Branch.

Allowables may be revised should a lower GOR well be completed in this pool.

Ron Stefik
Sr Reservoir Engineering Technician

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