

May 1, 2003

8300-2600/2700-59070-20 OGC - 03105

Guy Wylie, P. Eng Exploitation Engineer Canadian Natural Resources Limited 2500, 855 - 2 Street S.W. Calgary AB T2P 4J8

Dear Mr. Wylie:

RE: APPLICATION FOR COMMINGLED PRODUCTION CNRL ET AL WEASEL d-A5-B/94-H-2; WA# 1805

The Commission has reviewed your application dated March 28, 2003 requesting permission to commingle gas production from the Bluesky and Gething zones encountered in the subject well.

The Commission has designated the gas pools under application to be the Weasel – Bluesky "A" and Gething "A".

Reservoir pressure and fluid composition are similar for the two pools. Commingling approval is granted as both pools are in pressure communication as a result of fracture treatment. As both zones are completed in off-target locations for gas, they are subject to a penalized daily gas allowable (DGA) which is the product of the minimum unadjusted DGA of 60.0 e<sup>3</sup>m<sup>3</sup> and the off-target factor as calculated from the maximum possible displacement from deviation survey records.

We wish to advise you that your application to commingle production from these two pools is hereby approved, under the authority of section 41 of the *Drilling and Production Regulation*, subject to the following conditions:

- 1. Production from the Bluesky (1016.2–1017.4 mKB) and Gething (1036.6–1039.0 mKB) zones may be commingled.
- 2. Gas, condensate and water production should be allocated on the Ministry of Provincial Revenue BC S-1 and BC S-2 forms on the basis of Bluesky 30% and Gething 70%.
- 3. Production from each zone is subject to a daily gas allowable production limitation of 22.2 e<sup>3</sup>m<sup>3</sup>.
- 4. This approval may be modified at a later date if deemed appropriate through a change in circumstances.

Sincerely,

COMMINGLED PRODUCTION

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Wellfile (originals)
59070-20
Daily
Resource Revenue
R. Stefik
G. Farr
P.S. Attariwala
D. Krezanoski

Approval Letters to Industry
COMMINGLED PRODUCTION

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Wellfile (originals)
59070-20
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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 Location: 6<sup>th</sup> Flr 1810 Blanshard St. Victoria BC



Mailing Address: **Engineering and Geology Branch** PO BOX 9329 STN PROV GOV'T VICTORIA BC V8W 9N3

Location: 1810 Blanshard St - 6th FI Victoria BC V8T 4J1 Phone: (250) 952-0302

(250) 952-0291

59070-03/WA

## APPLICATION FOR DAILY GAS ALLOWABLE (DGA)

Individual Well

Form must be submitted under the authority of the Petroleum and Natural Gas Act R.S.B.C. 1996, c. 361, Drilling and Production Regulation, s.88, to the Oil and Gas Commission, at the address noted above. Information collected on this form will be used for public record in accordance with s.57 of the Drilling and Production Regulation.

	Initial Appli	ication	☐ Revision No						
Well Name CNRL et al Weasel d-A5-B/94-H-2					Well A		uthorization No.1805		
Field Weasel		Pool Bluesky"A"							
Factors		Units		Owner's s Obtained	Calculations  Values Used in This Calculation		COMMISSION USE ONLY Branch Calculations		
Depth to top gas pay		mKb		from	Calculat	ION	1016.3		
Depth to bottom gas pay		mKb	· · · · · · · · · · · · · · · · · · ·			** ***********************************	1018.8		
Assigned area	А	hectares					282.0		
Average net pay thickness	h	metres					0.5		
Average net porosity	φ	fraction					0.134		
Average water saturation Nominal 0.25)	S <sub>w</sub>	fraction					0.50		
Initial pool pressure at MPP	P <sub>i</sub>	kPaa					7552		
Formation temperature	Т	К					325		
Initial supercompressibility factor	Z <sub>i</sub>						0.876		
Recovery factor	R	fraction					0.90		
Unadjusted Daily Gas Allowable ( $10^3 \text{m}^3$ ) = $\left(\frac{\text{Ah}\phi(1-\text{Sw})\text{Pi R}}{35.16398\text{TZi}}\right)\left(\frac{1}{3.698}\right)$				<del>10</del> )			1.8		
Name				Position					
Signature		Company							
Date Phone				FAX No.					
		APP	ROVAL (fo	r commission use	only)				
Off-target penalty factor 0.3708 Daily gas allowable 22.2 10 <sup>3</sup> m <sup>3</sup> (minimum UDGA is 60.0 10 <sup>3</sup> m <sup>3</sup> in accordance with Section 1 of the Drilling and Production Regulation)									
Date Effective March 28, 2	2003								
Field Weasel Pool Bluesky "A"									
Approval Date May 1, 200	3				(A) (A	Arla.			
OGC_038_DGA Rev. 99				P. S. At	tariwala	Authorized	Commission Employee		



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## **APPLICATION FOR DAILY GAS ALLOWABLE (DGA)**

Individual Well

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	Initial Application			☐ Revision N							
Well Name CNRL et al Weasel d-A5-B/94-H-2			,			Well Authorization No.1805					
Field Weasel				Pool Gething "A"							
Factors		Units		Owner's s Obtained from	Calculations  Values Used Calculat		COMMISSION USE ONLY Branch Calculations				
Depth to top gas pay		mKb					1030.3				
Depth to bottom gas pay.		mKb					1038.3				
Assigned area	А	hectares					282.0				
Average net pay thickness	h	metres					4.8				
Average net porosity	φ	fraction					0.127				
\verage water saturation (Nominal 0.25)	S <sub>w</sub>	fraction					0.509				
Initial pool pressure at MPP	P <sub>i</sub>	kPaa				,	7552				
Formation temperature	Т	К					325				
Initial supercompressibility factor	Z <sub>i</sub>						0.876				
Recovery factor	R	fraction		· .			0.90				
Unadjusted Daily Gas Allowa	ble (10 <sup>3</sup> m³) =	$\frac{\text{(Pi R)}}{\text{TZi}} \left( \frac{1}{3.65} \right)$	50			15.7					
Name				Position		and the second s					
Signature			Company		,						
Date	Phone No	•	FAX No.								
APPROVAL (for commission use only)											
Off-target penalty factor 0.3700 Daily gas allowable 22.2 10 <sup>3</sup> m <sup>3</sup> (minimum UDGA is 60.0 10 <sup>3</sup> m <sup>3</sup> in accordance with Section 1 of the Drilling and Production Regulation)											
Date Effective March 28, 2003											
Field Weasel	Field Weasel Pool Gething"A"										
Approval Date May 1, 2	003			. #	2 Alle	int					
OGC_038_DGA Rev. 99				0 344	1 July 1	- Horizon	Commission Employee				