



November 7, 1996

961053

File: 5000-4100-59240-16

Mr. Ab Fink
Project Coordinator
Petro-Canada
P.O. Box 2844
Calgary, AB T2P 3E3

Dear Mr. Fink:

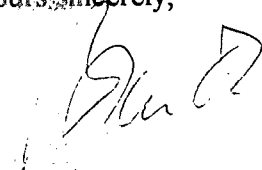
Re: Applications For Acid Gas Injection
PEX et al Jedney a-79-J/94-G-1 WA 9637
PEX et al Jedney b-88-J/94-G-1 WA 427
Jedney Baldonnel "A" Pool

This refers to your Applications wherein you requested approval of acid gas injection in the subject wells.

Attached, please find Approval 96-16-001 and Approval 96-16-002 for the Applications, granted under Section 116 of the *Petroleum and Natural Gas Act*.

It should be noted that the Ministry must be notified, in writing, of the date of commencement of acid gas injection for each well.

Yours sincerely,


B. van Oort, P. Eng.
Director
Engineering and Operations Branch

PSA/

Attachment

Copies for Approval Letters to Industry (10)
D.L. Johnson
Resource Revenue
P.S. Attariwala
R.G. Stefik
G. Farr
D. Richardson
S. Chicorelli
Daily
Well File
59070-04

9. The Wellhead Emergency Shut-Off Device and Subsurface Safety Valve must be installed to operate "fail-safe" and these should be linked to H₂S detector heads at the wellhead.
10. A barricade must be installed around the wellhead which is capable of withstanding vehicle collision.
11. All injection operations must be immediately suspended if any injection equipment, monitoring equipment or safety devices considered necessary for safe operation should fail.
12. The Operator must submit a progress report to the Energy and Minerals Division for each 6 month period the project is in operation, determined from the first day of injection. This requirement may be amended at the request of the operator after the scheme has been in operation for a period of 3 years. The progress report is due within 60 days after the end of each period and must contain:
 - (a) details of any workover or treatment program done on the injection well with reasons for the workover and results of the workovers,
 - (b) a discussion of any changes in injection equipment and operations,
 - (c) a general review of the operation of the project including identification of problems, remedial action taken and results of the remedial action on project performance,
 - (d) a discussion of the overall performance of the project,
 - (e) an evaluation of all monitoring done during the reporting period including corrosion protection, fluid analyses, logs and any other data collected,
 - (f) a table showing monthly volumes of injected fluid, corresponding maximum wellhead injection pressures, maximum daily injection rates, average wellhead temperatures and hours on injection,
 - (g) the volume-weighted average composition and formation volume factor for the injected fluid,
 - (h) a plot showing monthly injection volume and average pressure versus time on an ongoing basis,
 - (i) a table showing tonnes of sulphur and CO₂ disposed on a monthly and cumulative basis.

APPROVAL 96-16-01

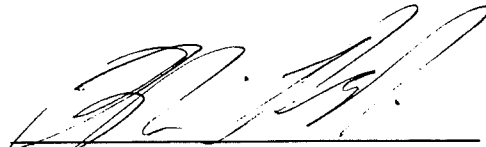
**PETROLEUM AND NATURAL GAS ACT
THE PROVINCE OF BRITISH COLUMBIA
MINISTRY OF EMPLOYMENT AND INVESTMENT
ENERGY AND MINERALS DIVISION**

IN THE MATTER of a proposal by Petro-Canada Resources (the "Operator") to inject acid gas into the Jedney Baldonnel "A" pool in the well PEX et al Jedney b-88-J/94-G-1 (the well).

The Minister of Employment and Investment, pursuant to section 116 of the *Petroleum and Natural Gas Act*, hereby orders as follows:

1. The proposal of the Operator for the injection of acid gas (hydrogen sulphide and carbon dioxide) into the well located in the Jedney Baldonnel "A" pool, as such proposal is described in :
 - (a) an application from the Operator to the ministry dated April 3, 1996,
 - (b) an application for a Project Approval Certificate from Westcoast Gas Services Inc. to the Environment Assessment Office dated January 17, 1996, and
 - (c) supplementary information filed in support thereof,is hereby approved, subject to terms and conditions herein contained.
2. Acid gas shall be injected only in the well.
3. The wellhead injection pressure must not exceed 9790 kPag.
4. The sandface injection pressure must not exceed 17 600 kPag.
5. The injection rate must not exceed $114 \times 10^3 \text{m}^3/\text{d}$ expressed at 101.325 kPa and 15 degrees centigrade.
6. The cumulative volume injected must not exceed $416 \times 10^6 \text{m}^3$ expressed at 101.325 kPa and 15 degrees centigrade.
7. The Operator must monitor the casing, conduct annular packer isolation tests and implement appropriate corrosion protection measures.
8. The Operator must monitor pressure in the offsetting wells and maintain the hydraulic isolation of the injection zone.

13. The project shall be deemed to have commenced upon the initiation of acid gas injection into the well. The Manager, Field Operations, at Charlie Lake must be notified in writing 72 hours prior to the commencement of injection operations.
14. An emergency response plan procedure must be filed with the Manager, Field Operations prior to the commencement of injection operations.
15. The operations of the acid gas injection scheme will be subject to periodic review by the ministry. The Director of Engineering and Operations Branch or the Manager, Field Operations, may issue general guidelines regarding the operations of the acid gas injection scheme.
16. The approval or any condition of it may be modified or rescinded by the Director of Engineering and Operations Branch for non-compliance of the conditions or unsafe operations.



Blair Redlin, on behalf of the
Minister of Employment and
Investment

DATED AT the City of Victoria, in the Province of British Columbia, this
31st day of October, 1996.