



January 31, 2005

7775-7400-59240-16
OGC -05031

Leonard Fabes, P. Eng.
Exploitation Engineer
Canadian Natural Resources Ltd.
Suite 2500, 855 – 2 Street SW
Calgary, AB T2P 4J8

Dear Mr. Fabes:

**Re: Application For Acid Gas Injection
CNRL Sikanni a-032-I/094-G-03; WA 5787
Sikanni – Debolt “C” Pool**

This refers to your application dated November 5, 2004 wherein a scheme for acid gas injection/disposal into the well a-032-I/094-G-03 of the subject pool was requested.

Attached please find Approval 05-16-001 for the application granted under Section 100 of the Petroleum and Natural Gas Act.

It should be noted that an “Application to Alter” for re-completion of the wellbore may be required to be submitted to the Commission’s office in Fort St. John.

We wish to point out that the Commission must be notified, in writing, of the date of commencement of acid gas injection for the subject well as specified in condition 13 of the Approval.

Sincerely,

Craig Gibson, P. Eng.
Director
Resource Conservation Branch

Attachment

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

Copy 9

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

RESOURCE CONSERVATION BRANCH

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

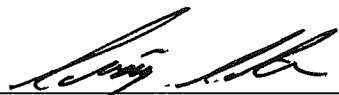
IN THE MATTER of a proposal (the Scheme) by Canadian Natural Resources Ltd. (the Operator) to inject acid gas into the Debolt "C" pool in the well CNRL Sikanni a-032-I/094-G-03 (the well).

NOW THEREFORE, the Commission, pursuant to section 100 of the Petroleum and Natural Gas Act, R.S.B.C. 1996, c.361 hereby orders as follows:

The Scheme of the Operator for the injection of acid gas (hydrogen sulphide and carbon dioxide) into the Debolt "C" pool through the well, as such proposal is described in an application from the Operator to the Commission dated November 5, 2004 is hereby approved, subject to terms and conditions herein contained.

1. Acid gas shall be injected only into the Debolt "C" pool through the well.
2. The area of the Scheme shall consist of units 32, 33, 42 and 43 of Block I/094-G-03.
3. The wellhead injection pressure must not exceed 10,200 kPag.
4. The sandface injection pressure must not exceed 28,400 kPag.
5. The injection rate must not exceed $25 \text{ } 10^3 \text{ m}^3/\text{d}$ expressed at 101.325 kPaa and 15 degrees Celsius.
6. The cumulative volume injected must not exceed $108.0 \text{ } 10^6 \text{ m}^3$ expressed at 101.325 kPaa and 15 degrees Celsius.
7. The Operator must monitor the casing, conduct annular packer isolation tests and implement appropriate corrosion protection measures.
8. The Operator must monitor reservoir pressure in the offsetting wells and maintain the hydraulic isolation of the injection zone.
9. The Wellhead Emergency Shut-Off Device must be linked to H₂S detector heads at the wellhead and a Subsurface Safety Valve or Injection Check Valve must be installed in the tubing string to operate "fail-safe".
10. A barricade must be installed around the wellhead that 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 Commission for each six-month period the Scheme is in operation, determined from the first day of injection. The requirement may be amended at the request of the operator after the scheme has been in operation for a period of three 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 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 scheme,
 - 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 carbon dioxide disposed on a monthly and cumulative basis.
13. The Scheme shall be deemed to have commenced upon initiation of acid gas injection into the well. The Director, Operations Engineering Branch 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 Director, Operations Engineering Branch prior to commencement of the injection operations.
15. The operations of the acid gas injection scheme will be subject to periodic review by the Commission. The Director, Resource Conservation Branch or the Director, Operations Engineering Branch, 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 for non-compliance of the conditions or unsafe operations.



Craig Gibson
Director
Resource Conservation Branch

DATED AT the City of Victoria, in the Province of British Columbia, this 31st day of January 2005.