September 6, 2001

3430-4610-55140-07 OGC – 01168

Mr. Wayne Kennedy, P. Eng. Exploitation Engineer Canadian Natural Resources Limited 2500, 855 – 2 Street S.W. Calgary, AB T2P 4J8

Dear Mr. Kennedy:

RE: UNDERGROUND NATURAL GAS STORAGE

DRAKE FIELD; A MARKER/BASE OF LIME "A" POOL

This refers to your application dated June 15, 2001 wherein you requested approval of a temporary storage licence for underground natural gas storage in the Drake A Marker/Base of Lime "A" pool

Based on the submitted technical data, the proposal by CNRL is considered appropriate. A notice of the application was published in the July 5 and 12, 2001 issues of the British Columbia Gazette. An objection to the storage scheme was received from Pioneer Natural Resources Canada Inc. (Pioneer). However, both Pioneer and CNRL have resolved all the issues and as a result, Pioneer has withdrawn their objection as per their letter dated September 4, 2001. Accordingly, Approval # 01-55140-07-1 is hereby granted under Part 14, section 131 of the <u>Petroleum and Natural Gas Act</u>.

Reference is made to a letter dated August 29, 2001 from the Mineral, Oil and Gas Revenue Branch, wherein procedures for royalty administration are described. It is expected that royalty administration satisfactory to the Mineral, Oil and Gas Revenue Branch will be maintained over the life of the scheme.

Please note that Petroleum and Natural Gas leases and underground storage lease must be maintained in good standing at all times.

Yours sincerely,

Craig Gibson, P. Eng.

Manager

Reservoir Engineering and Geology

Attachment

Cc: Mr. Ken Buckley (Pioneer Natural Resources Canada Inc.)

Gerald German (Director, Petroleum Lands Branch of MEM)

Doug Stangeland (Director, Mineral, Oil and Gas Revenue Branch)

August 28, 2001

3430-4610-55140-07 OGC - 01164

Mr. Ken Buckley Senior Landman Pioneer Natural Resources Canada Inc. 2900, 255 – 5 Avenue S.W. Calgary, AB T2P 3G6

Dear Mr. Buckley:

RE: UNDERGROUND NATURAL GAS STORAGE
DRAKE FIELD; A MARKER/BASE OF LIME "A" POOL

On June 15, 2001 Canadian Natural Resources Limited (CNRL) applied for a license for underground storage of natural gas in the subject pool.

Notice of the application was published in the BC Gazette with July 26, 2001 being the deadline for any valid objection. Pioneer Natural Resources Canada Inc. (Pioneer) in a letter dated July 26, 2001, objected to the scheme approval and proposed to meet with CNRL to discuss technical aspects of the application. In a letter to the Commission dated August 9, 2001 CNRL provided details of their correspondence of July 27, 2001 and a meeting of August 3, 2001 with Pioneer. It appears to the Commission that CNRL has addressed all the issues raised by Pioneer.

To date there has been no further action from Pioneer. The Commission feels that adequate time has elapsed to resolve any outstanding issues. Therefore, unless we receive additional information concerning the objection supported by valid technical reasons from Pioneer by September 4, 2001, the Commission may approve CNRL's application for underground storage.

If you have any questions, please contact Peter Attariwala at (250) 952-0311.

Sincerely,

Craig Gibson, P. Eng.

Manager

Reservoir Engineering and Geology

Cc: Jeff Bergeson (Exploitation Manager, CNRL).

ENGINEERING AND GEOLOGY

PO Box 9329 Stn Prov Gov't, Victoria BC V8W 9N3 Tel: (2 Location: 6th Flr 1810 Blanshard St. GEP, SWD, CONCURRENT PROD, PRESSURE MAINTENANCE, WATERFLOOD, ETC.

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Daily

R. Stefik
P. Attariwala

APPROVAL 01-55140-07-1



IN THE MATTER of a scheme by Canadian Natural Resources Limited (CNRL) to develop and use the Drake A Marker/Base of Lime "A" gas pool for the purposes of underground natural gas storage.

NOW THEREFORE, the Commission, pursuant to Part 14, section 131 of the <u>Petroleum and Natural Gas Act</u>, hereby grants a storage licence to CNRL for the scheme as described in:

an Application from CNRL to the Commission dated June 15, 2001 and related submission.

The scheme is approved, subject to the following conditions:

- 1. The scheme area is that part of the Drake field, A Marker/Base of Lime "A" pool located within Map 94-H-1: units 11, 21, 31, 41, 51-53, 61-63, 71, 81 and 91 of Block E, units 20, 30, 34-40, 44-50, 58-60, 68-70, 78-80, 88-90, and 100 of Block F, unit 10 of Block K and unit 1 of Block L.
- 2. The underground natural gas storage scheme must be designed, constructed, operated and abandoned in accordance with the relevant sections of CSA Standard Z341-98 as amended from time to time.
- 3. The maximum bottom hole pressure at the injection well must not exceed the discovery pressure of 7,570 kPa (absolute).
- 4. A progress report must be submitted to the Commission within 60 days after the end of each calendar year the scheme is in operation. The progress report must contain the following:
 - (a) the volume of gas injected into and produced from the total scheme and from each well in the scheme, on a monthly, annual and cumulative basis,
 - (b) the net volume of gas stored in the pool on a monthly basis, after commencement of operations,
 - (c) representative compositions of the gas injected into and produced from the pool during the reporting period,
 - (d) a summary of the pressure data measured in the pool during the reporting period,
 - (e) a summary of changes or modifications in the operation of the scheme during the reporting period, including well workovers, recompletions and suspensions, or any surface facility modifications,
 - (f) interpretations of the performance of the scheme including an updated material balance analysis with an estimation of the maximum and minimum reservoir pressure attained during the report period, and a discussion of any anomalous behavior,
 - (g) current operating capability of the scheme including working gas, cushion gas, maximum and minimum deliverability/injectivity and maximum injection pressure and minimum injection pressure.
- 5. The Commission must be notified in writing of the date of commencement of gas storage scheme.
- 6. This approval or any condition of it may be modified or rescinded for non-compliance with terms of this approval, <u>Petroleum and Natural Gas Act</u> and Storage Reservoir Regulation or as may be required to address revised geological interpretation resulting from new data or information.

Craig Gibson Manager

Reservoir Engineering and Geology

DATED AT the City of Victoria, in the Province of British Columbia, this day of September, 2001.