OIL AND GAS COMMISSION

December 1, 2003

8100-4900-59240-15
OGC – 03315

Dominion Experimental (04)

Mr. Steve Burnside
BC Asset Team
Dominion Energy Canada Limited
Suite 3200, 605 – 5th Avenue, SW
Calgary, AB T2P 3H5

Dear Mr. Burnside:

RE: EXPERIMENTAL SCHEME FOR IMPROVED OIL RECOVERY (Amendment #1)
STODDART WEST DOIG "D"

The Commission has reviewed your application dated August 19, 2003 requesting an amendment to the maximum sandface injection pressure at the 01-05-088-21W6M acid gas injection well.

A review of technical data, including fracture stimulation data obtained from the 01-05-088-21W6M well on November 15, 2001, indicates that an increase in sandface injection pressure is reasonable. As such, the original approval is hereby amended to reflect this.

Please find attached Approval 01-15-006 (Amendment #1) for the application granted under section 100 of the Petroleum and Natural Gas Act.

Sincerely,

Craig Gibson, P. Eng.
Director
Resource Conservation Branch

Approval Letters to Industry
GEP, SWD, CONCURRENT PROD,
PRESSURE MAINTENANCE,
WATERFLOOD, ETC.
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- [ ] Wellfile (originals)
- [ ] 59240
- [ ] Daily
- [ ] Resource Revenue
- [ ] S. Chicorelli
- [ ] R. Stefik
- [ ] G. Farr
- [ ] P. Attariwala
- [ ] D. Krezanoski

Attachment

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APPROVAL 01-15-006 (Amendment #1)

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

IN THE MATTER of the experimental scheme of Dominion Energy Canada Limited (Operator) for improved oil recovery by acid gas injection into the Stoddart West Doig "D" pool.

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:

1. The experimental scheme for the injection of acid gas (hydrogen sulphide and carbon dioxide) for improved oil recovery from the Stoddart West Doig "D" pool, as such proposal is described in the application to the Commission dated May 30, 2001 and supplemented with an additional application dated August 19, 2003 is hereby amended, subject to terms and conditions herein contained.
2. The area of the experimental scheme consists of sec 32-87-21 W6M, SW/4 sec 4 and S/2 sec 5-88-21 W6M.
3. The project daily oil allowable is 400 m^3/d.
4. The project daily gas allowable is 480 $10^3m^3/d$.
5. Acid gas shall be injected into the Doig "D" pool through the well 1-5-88-21 W6M.
6. The sandface injection pressure must not exceed 40,000 kPag.
7. The injection rate must not exceed 200 $10^3m^3/d$ expressed at 101.325 kPaa and 15 degrees Celsius.
8. The Operator must monitor the casing, conduct annular packer isolation tests and implement appropriate corrosion protection measures.
9. The Operator must monitor pressure in the offsetting wells and maintain the hydraulic isolation of the injection zone.
10. The Wellhead Emergency Shut-Off Device at the injector must be linked to H_2S 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".
11. A barricade must be installed around the acid gas injector wellhead that is capable of withstanding vehicle collision.
12. All injection operations must be immediately suspended if any injection equipment, monitoring equipment or safety devices considered necessary for safe operation should fail.
13. 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 acid gas 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) the daily average rate of oil, gas and water produced during each month for each producing well, and for the project as a whole,
    b) the monthly cumulative oil, gas and water production from each producing well, and for the project as a whole,
    c) details of any workover or treatment program done on any of the wells with reasons for the workover and results of the workovers,

d) a discussion of any changes in injection equipment and operations,

e) 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,

f) a discussion of the overall performance of the project,

g) an evaluation of all monitoring done during the reporting period including corrosion protection, fluid analyses, pressures and any other data collected,

h) a table showing monthly volumes of injected fluid, corresponding maximum wellhead injection pressures, maximum daily injection rates, average wellhead temperatures and hours on injection,

i) the volume-weighted average composition and formation volume factor for the injected fluid,

j) representative sample analysis of produced gas,

k) a plot showing monthly injection volume and average pressure versus time on an ongoing basis,

l) a table showing tonnes of sulphur and carbon dioxide disposed on a monthly and cumulative basis,

m) Any other information that is considered necessary, in the opinion of the Commission, to evaluate the progress, performance and efficiency of the scheme.

14. Emergency response plan updates must be filed with the Director, Operations Engineering a minimum of once per year or as often as is required to ensure safety of the public, workers and environment.

15. The operations of the acid gas injection scheme will be subject to review by the Commission. The Director, Resource Conservation or the Director, Operations Engineering, 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, Resource Conservation 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 17th day of December, 2003.