

Tenneco Oil Exploration and Production

A Tenneco Company



Southwestern Division

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August 29, 1979

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

Tenneco Oil Company makes application to convert six producing wells to water injection for secondary recovery by waterflood on Leonard Federal and Leonard Brothers leases (USGS Lease No. NM-7951) in Sections 13 and 14, Township 26 South, Range 37 East, Leonard Queen Pool, Lea County, New Mexico. On March 21, 1978 a hearing was held at Santa Fe, New Mexico, Case No. 6161 requesting approval of two waterflood projects and an administrative procedure. The resulting Order No. R-5675 is attached as Exhibit "I".

The six proposed injection wells are Leonard Federal Nos. 9, 10, 11, 13 and Leonard Brothers Nos. 14 and 21 as shown on Exhibit I. Before injection begins in the six wells for which approval is requested, the following work will be completed:

- 1) Internally plastic coated tubing and packer will be run in each well and set at approximately 100 feet above the perforations.
- 2) The casing-tubing annulus in each well will be filled with an inert fluid and a connection for pressure gauge will be installed to permit determination of leakage.
- 3) The surface injection pressure will be limited to 680 pounds until such time approval is obtained for a higher pressure.
- 4) The wells will be equipped to facilitate periodic testing of the bradenhead for pressure or fluid production.

Per Exhibit "A" of New Mexico Oil Conservation Order No. R-5675 (Exhibit No. I), there are five wells which may or may not be plugged adequately. Three of the wells are outside the one-half mile distance to the wells we propose converting to water injection. The three wells, Ralph Lowe No. 2, Stanolind Oil Co. Leonard Oil No. 2, and the Midwest Refining Co.

Farnsworth No. 19 in Section 12, will all be addressed at the appropriate time when later phases of the waterflood are initiated. These wells are marked on Exhibit II which is a map showing all wellbores in the South Leonard area.

You will find attached a copy of the request to the USGS for renewal of the permit to re-enter Leonard Brothers No. 14 (Exhibit III). We plan to re-enter the well, deepen and case it to 3600'. The current wellbore schematic is on Exhibit IV, and the proposed wellbore configuration is on Exhibit V. Perforations will be selected from logs to be run, treatment performed, and a packer set +100' above the perforations to commence water injection.

The Midwest Refining Company Farnsworth No. 19 in Section 14 will be re-entered and cleaned out to 2900' to be plugged to abandon. Exhibit VI is a wellbore schematic showing the current downhole condition of the well. We plan to plug it with 100' plugs - 50' above and 50' below each casing shoe and casing cutoff point. Exhibit VII is the proposed wellbore schematic.

Exhibits VIII-XII are Wellbore Schematics of Leonard Federal Nos. 9, 10, 11, 13 and Leonard Brothers No. 21, respectively. Exhibit XIII includes copies of all the Form 9-331s sent to the USGS for each proposed injector.

In support of this application we have enclosed:

- a) a plat showing the location of the proposed wells, all wells within the project area and offset operators;
- b) a schematic drawing of each of the proposed injection wells which fully describes the casing, tubing, perforated interval, and appropriate depths.
- c) a copy of the letter sent to all offset operators in which said operators were furnished a copy of this application.

An archaeological study was performed by Dr. J. Loring Haskell of Carlsbad, New Mexico, which you should have received a copy of his report stating that the right-of-ways for injection lines were archaeologically approved for our work. He has not yet looked at the Leonard Brothers No. 14, but he will and mail you the results. Upon your approval of conversion of the six wells to water injection we will commence laying the injection lines per Exhibit II.

We estimated secondary recovery from this project to be 663 MB0. The six wells previously discussed will constitute a pilot waterflood area

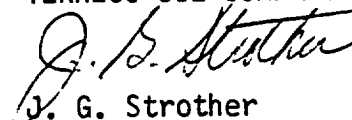
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to give us a better indication of secondary reserves for Tenneco's acreage and will also give us a better idea of any preferential flooding.

The foregoing meets the requirements contained in Order No. R-5675 (a copy of this is enclosed); therefore, we respectfully request approval of this application.

Yours very truly,

TENNECO OIL COMPANY



J. G. Strother
Division Production Manager

MJ/mb
Attachments

cc: United States Department of the Interior
Geological Survey
Conservation Division
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