

MAIN OFFICE OCC

BEFORE THE OIL CONSERVATION COMMISSION

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OF THE STATE OF NEW MEXICO

APPLICATION OF THE HUMBLE OIL & REFINING COMPANY FOR AN ORDER AUTHORIZING THE INJECTION OF WATER FOR PRESSURE MAINTENANCE AND SECONDARY RECOVERY PURPOSES INTO THE GALLUP FORMATION UNDERLYING APPLICANT'S NAVAJO "F" AND "G" LEASES IN THE HORSESHOE-GALLUP OIL POOL, SAN JUAN COUNTY, NEW MEXICO, PURSUANT TO RULE 701 OF THE RULES AND REGULATIONS OF THE NEW MEXICO OIL CONSERVATION COMMISSION AND FOR THE PROMULGATION OF SPECIAL RULES GOVERNING THE OPERATION OF SAID PROJECT

CASE NUMBER 2024

TO THE HONORABLE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO:

Comes the HUMBLE OIL & REFINING COMPANY, a corporation, with a certificate of authority to do business in the State of New Mexico, and hereby makes application to the New Mexico Oil Conservation Commission for an order authorizing the injection of water for pressure maintenance and secondary recovery purposes into the Gallup formation underlying the Navajo "F" and "G" leases of applicant embracing lands within the Horseshoe-Gallup Oil Pool, San Juan County, New Mexico, pursuant to Rule 701 of the Commission, and for the promulgation of special rules governing the operation of said project, and in support thereof respectfully shows:

1. That there is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "A", a plat showing the Navajo "F" and "G" leases of applicant embracing lands within the Horseshoe-Gallup Oil Pool, together with the location of all wells drilled thereon and all wells drilled within a radius

of two miles from the proposed injection wells hereinafter referred to, all of which said wells located upon said leases are producing from the Gallup formation which is a member of the Mancos formation of Cretaceous age. Said Exhibit "A" also shows the location of the proposed injection wells and the ownership of the respective leasehold interests within a radius of two miles from applicant's oil and gas leases.

2. That there is outlined in red on Exhibit "A" attached hereto, the proposed project area which is a part of the lands embraced in applicant's Navajo "F" and "G" leases, and which embrace the following described lands, to-wit:

Township 31 North, Range 17 West, N.M.P.M.

Section 3: SW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$
 Section 4: N $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ N $\frac{1}{2}$, S $\frac{1}{2}$
 Section 9: N $\frac{1}{2}$ N $\frac{1}{2}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$,
 N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$
 Section 10: N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$
 Section 11: SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$

containing 1,920 acres, more or less.

3. That there is filed herewith and for purposes of identification marked Exhibit "B", electrical logs of the proposed injection wells, more particularly described as follows:

Navajo "F" Well No. 1, Unit D, Section 4
 Navajo "F" Well No. 3, Unit L, Section 4
 Navajo "F" Well No. 8, Unit E, Section 10
 Navajo "F" Well No. 9, Unit K, Section 10
 Navajo "F" Well No. 11, Unit I, Section 10
 Navajo "F" Well No. 14, Unit M, Section 10
 Navajo "F" Well No. 15, Unit J, Section 9
 Navajo "F" Well No. 17, Unit G, Section 10
 Navajo "F" Well No. 18, Unit C, Section 10
 Navajo "F" Well No. 21, Unit D, Section 10
 Navajo "F" Well No. 22, Unit H, Section 9
 Navajo "F" Well No. 23, Unit B, Section 9
 Navajo "F" Well No. 24, Unit P, Section 4
 Navajo "F" Well No. 25, Unit N, Section 4
 Navajo "F" Well No. 27, Unit J, Section 4
 Navajo "F" Well No. 28, Unit F, Section 4
 Navajo "F" Well No. 31, Unit N, Section 3
 Navajo "F" Well No. 32, Unit L, Section 3
 Navajo "F" Well No. 33, Unit D, Section 9
 Navajo "F" Well No. 34, Unit F, Section 9
 Navajo "F" Well No. 36, Unit A, Section 10
 Navajo "F" Well No. 38, Unit H, Section 4
 Navajo "F" Well No. 40, Unit P, Section 9

Navajo "F" Well No. 43, Unit O, Section 3
*Navajo "F" Well No. 44, Unit O, Section 10
Navajo "G" Well No. 3, Unit K, Section 11
Navajo "G" Well No. 4, Unit M, Section 11
Navajo "G" Well No. 5, Unit O, Section 11
Navajo "G" Well No. 6, Unit E, Section 11

*Proposed Injection Well Location to be drilled.

4. That there is also attached hereto, made a part hereof, and for purposes of identification marked Exhibit "C", a schedule showing all of applicant's wells located upon its Navajo "F" and "G" leases within the proposed project area, including the proposed injection wells which have been indicated on the exhibit, and which shows the total depth of each well, the production casing size, the depth to which the casing has been set, estimated top of the cement used in setting the casing, perforated interval, and completion date of each well. Said exhibit also shows the initial production of each well, the May, 1960 production, and the cumulative production to date.

5. Applicant proposes to inject water through the injection wells above set forth into the Gallup-Sandstone producing formation underlying the project area, the water to be injected at rates ranging between 75 barrels and 350 barrels per day per well.

Applicant proposes to obtain the water for injection purposes from its water Well No. 1 located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 10, Township 31 North, Range 17 West, N.M.P.M., and which is shown on Exhibit "A" attached hereto, and which said well is capable of producing water in quantities believed to be sufficient for the proposed pressure maintenance and secondary recovery project from the Morrison formation. That applicant has furnished the Office of the State Engineer with a description of said well, together with a water analysis report of the water which complies with Commission Memorandum No. 5-58 dated January 31, 1958.

6. That applicant is the sole owner of the oil and gas leases referred to as Humble's Navajo "F" and "G" leases shown on Exhibit "A" attached hereto, and which together embrace all of the proposed project area, and applicant believes that it will be in the interest of conservation and the prevention of waste to inaugurate a water injection program for pressure maintenance and secondary recovery purposes as soon as possible by the injection of water into the injection wells above referred to, and that said project is in the interest of obtaining the greatest ultimate recovery of oil and gas from said formation. Applicant therefore respectfully requests that the area hereabove described be designated as the project area, and that an allowable formula be fixed therefor, and in connection therewith recommends the adoption of special field rules governing said project as follows:

(a) The conversion of the producing wells listed in paragraph 3 hereof to water injection wells, including the drilling of proposed injection well "Navajo 'F' Well No. 44, Unit 0, Section 10".

(b) That the allowable for the project area be the sum of the allowables of the several wells within the project area including those wells which may be shut in, curtailed, or used as injection wells.

(c) That allowables for injection wells be transferred to producing wells within the project area as well as allowables for producing wells which, in the interest of more efficient operation of the project, are shut in or curtailed because of high gas-oil ratio or are shut in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

(d) That the allowable assigned to any well which is shut in or which may be curtailed in accordance with the applicable special rules, and which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test period prescribed by the special rules, or greater than the top unit allowable for the pool during the month of transfer, whichever is less.

(e) That the allowable assigned to any injection well on a 40-acre proration unit shall be the top unit allowable for the Horseshoe-Gallup Oil Pool.

(f) That the allowable assigned to any well which is shut in or curtailed in accordance with the special rules shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the Horseshoe-Gallup Oil Pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission if so desired.

(g) That the top allowable assigned to each producing well in the project shall be equal to the well's ability to produce or to the top unit allowable of the Horseshoe-Gallup Oil Pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the project area producing from the same common source of supply shall not produce in excess of two times top unit allowable for the pool. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Horseshoe-Gallup Oil Pool, except that any well or wells within the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net gas-oil ratio basis", which net gas-oil ratio shall be determined in accordance with such equitable formula as may be determined by the Commission including credit for daily average net water injected through any injection well located within the project area.

(h) That the project operator submit each month, within a reasonable time after the normal unit allowable for Northwest New Mexico has been established, to the Commission, a pressure maintenance project operator's report on a form prescribed by the Commission requesting allowables for each of the several wells in the project area as well as the total project allowable.

(i) That the Commission calculate the allowable for each well in the project area, and that the sum of the allowables so calculated be assigned to the project so that the same may be produced from the wells in the project in any proportion except that no well in the project which directly or diagonally offsets a well outside the project producing from the same common source of supply shall produce in excess of two times top unit allowable for the Horseshoe-Gallup Oil Pool.

(j) That provision be made for the administrative approval by the Commission of the conversion of additional producing wells to injection wells, and the drilling of additional producing and injection wells, and the expansion of the project area under such reasonable conditions as may be prescribed by the Commission.

WHEREFORE, Applicant requests that this application be set down for hearing before an examiner after due notice as required by law and the rules and regulations of the Commission.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By 

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By 
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