

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7974
Order No. R-3181-B

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR THE AMENDMENT OF DIVISION
ORDERS R-3181 AND R-3181-A, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 12, 1983, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 2nd day of November, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Phillips Petroleum Company, seeks the amendment of Division Orders R-3181 and R-3181-A to include the injection of water as an approved injection fluid, the conversion of certain producing wells to injection wells, the expansion of the project area for the Vacuum Abo Unit Pressure Maintenance Project, and the establishment of an administrative procedure for the approval of additional injection and producing wells at orthodox and unorthodox locations within the Project area.
- (3) That Division Order No. R-3180, entered on January 18, 1967, approved the Vacuum Abo Unit consisting of 3640 acres, more or less, in Lea County, New Mexico.
- (4) That Division Order No. R-3181, entered on January 18, 1967, authorized the institution of a pressure maintenance project (by gas injection) in a portion of said unit.

(5) That said Order No. R-3181 further established special rules and regulations for the operation of said project being designated the Vacuum Abo Pressure Maintenance Project.

(6) That Division Order No. R-3181-A entered on September 10, 1969, permitted the injection of gas into additional wells and expanded the project area.

(7) That the applicant now seeks the expansion of said project and the amendment of the special rules to permit the injection of water into the Abo formation through the following ten unit wells:

<u>Unit</u> <u>Tract No.</u>	<u>Well</u> <u>No.</u>	<u>Unit</u> <u>Letter</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>
1	9	J	27	17 South	35 East
4	6	B	26	17 South	35 East
5	2	O	26	17 South	35 East
6	68	H	34	17 South	35 East
9	5	H	33	17 South	35 East
12	2	M	33	17 South	35 East
13	7	G	5	18 South	35 East
13	9	D	3	18 South	35 East
13	18	K	4	18 South	35 East
15	3	B	8	18 South	35 East

(8) That with the addition of water injection into said ten unit wells, the Vacuum-Abo Pressure Maintenance project area should be expanded to include the entire area currently committed to the unit.

(9) That Rule 1 of said special rules should be amended to reflect the expanded project area.

(10) That to permit proper operation of the project with the addition of water injection, Rule 7 of said special rules and regulations should be amended to permit production in excess of top allowable upon a well receiving a substantial response to injection (gas or water).

(11) That the applicant proposes to take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

(12) That approval of the subject application will prevent waste, protect correlative rights and will result in the recovery of additional oil reserves that would not otherwise be produced.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to expand its Vacuum Abo Pressure Maintenance Project by the injection of water into the Abo Reef formation through the following 10 wells:

<u>Unit</u> <u>Tract No.</u>	<u>Well</u> <u>No.</u>	<u>Unit</u> <u>Letter</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>
1	9	J	27	17 South	35 East
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15	3	B	8	18 South	35 East

(2) That water injection into said wells shall be accomplished through tubing installed in a packer set within 100 feet of the uppermost perforation. The injection tubing shall be corrosion protected by a non-reactive internal lining or coating. The casing-tubing annulus shall be filled with an inert fluid and a surface pressure gauge or approved leak detection device shall be attached to the annulus.

(3) That the water injection wells or system shall be equipped in such a manner as to limit the wellhead injection pressure to no more than 0.2 psi per foot of depth to the uppermost perforation; provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any project injection well, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(5) That Rule 1 of the Special Rules and Regulations for the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project is hereby amended to read in its entirety as follows:

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"Rule 1. The Project area of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the following area:

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 25: NW/4 NE/4 and N/2 NW/4
Section 26: E/2 NW/4, SW/4 NW/4, NE/4, and S/2
Section 27: S/2 SW/4 and SE/4
Section 33: SE/4 NE/4, SW/4 SW/4, E/2 SW/4 and
SE/4
Section 34: N/2, SW/4, N/2 SE/4 and SW/4 SE/4
Section 35: NW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 3: N/2 NW/4 and SW/4 NW/4
Section 4: N/2, N/2 S/2, and S/2 SW/4
Section 5: NE/4 NE/4, S/2 N/2 and S/2
Section 8: NW/4 and N/2 NE/4

(6) That Rule 7 of the Special Rules and Regulations for the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project is hereby amended to read in its entirety as follows:

"Rule 7. The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the Vacuum-Abo Reef Pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the Vacuum Abo Unit Area producing from the same common source of supply shall not produce in excess of top unit allowable for the pool until such time as the well receives a substantial response to injection. When such a response has occurred, the well shall be permitted to produce up to two times top unit allowable for the pool. Production of such well at a higher rate shall be authorized only after notice and hearing. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Vacuum-Abo Reef Pool, except that any well or wells within the project area producing with a gas-oil ration 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 ration shall be determined by applying credit for daily average gas injected, if any, into the Vacuum-Abo Reef Pool within the project area to such high gas-oil ratio well.

The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$\text{Aadj} = \frac{\text{TUA} \times \text{Fa} \times 2,000}{\frac{\text{Pg} - \text{Ig}}{\text{Po}}}$$

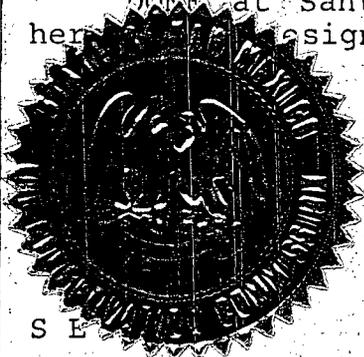
where:

- Aadj = the well's daily adjusted allowable
TUA = top unit allowable for the pool
Fa = the well's acreage factor
Pg = average daily volume of gas produced by the well during the preceding month, cubic feet
Ig = the well's allocated share of the daily average gas injected during the preceding month, cubic feet
Po = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{\text{Pg} - \text{Ig}}{\text{Po}}$, to be less than 2,000 cubic feet of gas per barrel of oil produced."

(7) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinafter designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Joe D. Ramey
JOE D. RAMEY,
Director