

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

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

**CASE NO. 10771 DE NOVO
Order No. R-9955-A**

**APPLICATION OF OXY USA INC. TO AUTHORIZE
THE EXPANSION OF A PORTION OF ITS SKELLY
PENROSE "B" UNIT WATERFLOOD PROJECT AND
TO QUALIFY SAID EXPANSION FOR THE RECOVERED
OIL TAX RATE PURSUANT TO THE "NEW MEXICO ENHANCED
OIL RECOVERY ACT," LEA COUNTY, NEW MEXICO**

ORDER OF THE COMMISSION

BY THE COMMISSION:

NOW, on this 29th day of April, 1994, the Commission, a **quorum** being present, having considered the evidence including the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this case and the subject matter thereof.

(2) Oxy USA Inc. ("OXY") is the current operator of the Skelly Penrose "B" Unit Waterflood Project ("The Unit") which was approved by Division Order No. R-2915 issued effective June 1, 1965.

(3) At the time of unitization on July 1, 1965, the Unit comprised 63 wells encompassing 2612 acres. Waterflood operations were initiated during mid-1966 on 80-acre five-spot injection patterns.

(4) The Unit has remained unchanged and is currently producing at 80 BOPD and 959 BWPD from 20 active producers. Only 7 injectors are currently active.

(5) OXY sought authority from the Division to expand the waterflood operations in a portion of its Skelly Penrose "B" Unit Waterflood Project ("EOR Project") and authorization to make the necessary changes to convert the EOR Project from 80-acre five spot patterns to 20-acre infill with 40-acre 5-spot patterns.

(6) In addition, Oxy sought to qualify a portion of that waterflood project for the EOR tax rate by reducing the waterflood pattern to 40-acre five spot. That reduction in pattern involves the conversion of old producers to injectors, the equipping of wells for injection, and the drilling of 10 new producers.

(7) As of the date of the Examiner hearing, five of these new producers had been drilled while the remaining five new producers had not yet been drilled.

(8) In Order R-9955, issued September 7, 1993, the Division approved Oxy's application to expand waterflood operations and its plan to reduce the waterflood pattern as a significant change in process, but in approving the EOR Project Area limited the production which may qualify for the recovered oil tax rate to the five producing wells not yet drilled and denied the recovered oil tax rate to the five producers already drilled.

(9) The Division's reasons for this action are set forth in Order R-9955, Findings:

"(23) ...that action taken to reduce the spacing and waterflood injection pattern within a "Project Area" several years prior to making application for the EOR reduced tax rate does not represent a significant change or modification in technology or process used for the displacement of crude oil, but rather represents a logical continuation of a process previously commenced." and

"(24) In order to be consistent with current Division policy, the Project Area eligible for the recovered oil tax rate should contain only that area that has not been previously infill drilled."

(10) Oxy contended before the Commission that this interpretation by the Division is more restrictive than required by Division Order No. R-9708 or by the Enhanced Oil Recovery Act.

(11) OXY seeks to expand a portion of this Unit (the "EOR Project Area") by means of a significant change in the process used for the displacement of crude oil and by increasing the size of the geologic area representing a unique area of activity to be accomplished by 20-acre infill drilling, reworking, establishment of water injection and initiation of 40-acre, 5-spot patterns.

(12) The geologic evidence presented by Oxy demonstrated that the Queen reservoir in the Expanded Use Area contains distinct stringers each vertically isolated from the others with permeability and porosity being highly variable over this entire portion of the unit resulting in the existing 80-acre waterflood pattern not having enough wells to penetrate all discontinuous and lenticular oil bearing Queen sands. The result is that the original method of 80-acre five spot injection patterns has left unrecovered substantial volumes of oil.

(13) Applicant's engineering evidence concludes that changing or modifying the injection patterns by drilling additional producers and converting existing producing wells to injection should result in an estimated additional 971,780 barrels of oil to be recovered, with a current undiscounted value of \$16 million dollars.

(14) While new producers are to be drilled in the EOR Project as infill wells, none of those producers will be recovering enough primary oil to pay for their costs. Instead, these producers constitute an integral part of the EOR project providing the necessary injection patterns and sweep efficiency for the secondary recovery project.

(15) The total project cost is estimated to be \$2,733,000.

(16) Based on the testimony presented in this case:

- (a) the reduction in the waterflood spacing pattern to 40-acre 5 spot in the Expanded Use Area should result in a substantial increase in the amount of crude oil ultimately recovered therefrom;
- (b) the Expanded Use Area has been so depleted that it is prudent to implement a waterflood injection well pattern reduction to maximize the ultimate recovery of crude oil from the project area; and,
- (c) the proposed enhanced oil recovery project is economically and technically feasible and has not been prematurely filed.

(17) The proposed "Expanded Use Area" contains 760 acres, more or less, and is specifically described as follows:

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM

Section 4: W/2 NW/4

Section 5: E/2; SW/4; S/2 NW/4

Section 8: NW/4 NE/4; N/2 NW/4

which area should comprise the acreage affected by injection on 40-acre patterns.

(18) The subject Expanded Use Area within the Skelly Penrose "B" Unit Waterflood Project should be qualified an "Enhanced Oil Recovery Project" (EOR) pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(19) The application should be approved and the EOR Project should be governed by the provisions of the "Rules and Procedures for Qualifications of Enhanced Oil Recovery Projects" and "Certification for Recovered Oil Tax Rate" as promulgated by Division Order No. R-9708.

(20) The Commission further finds that:

(a) the reduction of the waterflood pattern from 80-acre five spot to 40-acre five spot within an existing waterflood project area is a significant change in the process for the displacement of crude oil;

(b) the Project Area eligible for the recovered oil tax rate shall not be defined or limited only to that area that has not been previously infill drilled;

(c) to be eligible for the recovered oil tax rate, the operator needs to establish that a positive production response has occurred for the Project Area and not for each specific individual well in that project area and that injection has occurred throughout the project area as originally planned. Project Area Graphs illustrating the oil producing rate, the injectivity index, the producing oilcut as a percent of total fluid, including CO₂ (when applicable) as reservoir barrels would help clarify the production response. Also, a project area plot of cumulative production in reservoir barrels (include CO₂ when applicable) vs. cumulative injection would be helpful.

IT IS THEREFORE ORDERED THAT:

(1) The application of OXY USA INC. to qualify its Expanded Use Area within a portion of its Skelly Penrose "B" Unit Waterflood Project, which was the subject of Division Order No. R-2915, as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5), is hereby approved.

(2) The subject "enhanced oil recovery project area" shall comprise the following described areas in Lea County, New Mexico:

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM

Section 4: W/2 NW/4

Section 5: E/2; SW/4; S/2 NW/4

Section 8: NW/4 NE/4; N/2 NW/4

(3) Oxy's Division Hearing Exhibit 8 shall be used by the Division as the "baseline" data from which to help determine a positive production response.

(4) Findings (23) and (24) are hereby vacated and Finding (25) of Order No. R-9955 is modified to include the following additional wells: SPBU Well No. 64; SPBU Well No. 65; SPBU Well No. 66; SPBU Well No. 67; and SPBU Well No. 68.

(5) Ordering Paragraph (12) of Order No. R-9955 is vacated and the following adopted:

" The Project Area shall be defined in terms of all of the producing wells within the project area regardless of when drilled."

(6) Except as modified by this De Novo order, all other findings and ordering provisions of the Division Order No. R-9955 shall remain in effect.

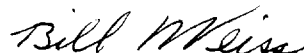
(7) Jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

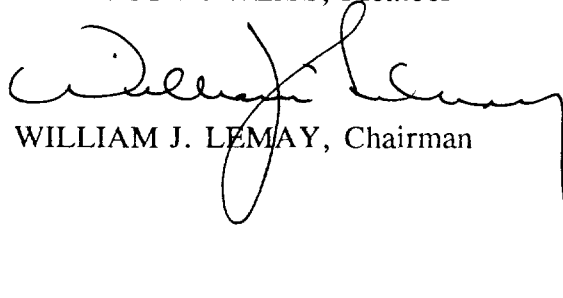
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



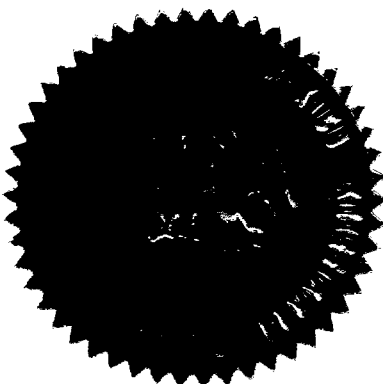
GARY CARLSON, Member



WILLIAM W. WEISS, Member



WILLIAM J. LEMAY, Chairman



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