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

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

PRE-HEARING STATEMENT

This pre-hearing statement is submitted by OXY USA INC. as required by the Oil Conservation Division.

APPEARANCE OF PARTIES

APPLICANT	ATTORNEY
Oxy USA Inc. P. O. Box 50250 Midland, Texas 79710 Attn: Richard Foppiano (915) 685-5913	W. Thomas Kellahin KELLAHIN AND KELLAHIN P.O. Box 2265 Santa Fe, NM 87504 (505) 982-4285

OPPOSITION OR OTHER PARTY — ATTORNEY

None

STATEMENT OF CASE

APPLICANT

Oxy USA Inc. seeks Division approval to expand a portion of its Skelly Penrose "B" Unit Waterflood Project. by means of a significant change in process including conversion to 40-acre five spot injection pattern as shown on Exhibit A attached.

Oxy USA Inc further seeks to qualify said expansion for the recovered oil tax rate pursuant to the New Mexico Enhanced Oil Recovery Act by means of a significant change in process as summarized on Exhibit B attached.

PROPOSED EVIDENCE

APPLICANT

WITNESSES	EST. TIME	EXHIBITS
Scott Gengler (P.E.)	1 Hr.	14 exhibits
Richard Foppiano (P.E.)	30 Min.	

PROCEDURAL MATTERS

None applicable at this time.

KELLAHIN AND KELLAHIN

By: _____
W. Thomas Kellahin
P.O. Box 2265
Santa Fe, New Mexico 87504
(505) 982-4285

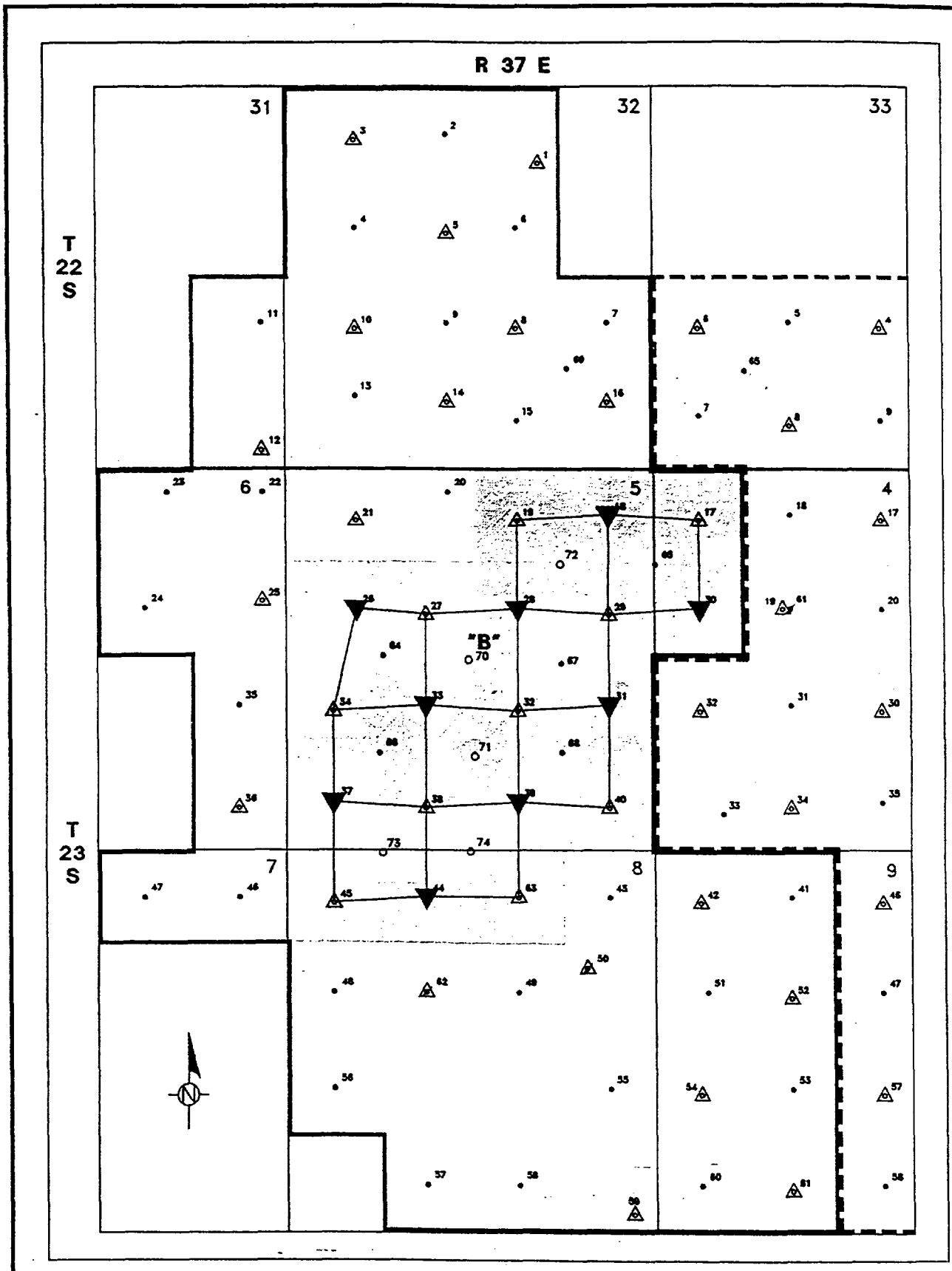
R 37 E
31
32
33
T 22 S
6
5
4
"B"
T 23 S
7
8
9
• PRODUCER
WATER INJECTOR
PLUGGED & ABANDONED
PENROSE UNIT "B"
PENROSE UNIT "A"
CONVERT TO INJECTION
NEW PRODUCER
GHY USA INC. - OPERATOR
PENROSE "B" UNIT
Lea County, New Mexico
PROJECT AREA
0
1000'
Revised: 5/11/93
Wells Revised: 2/17/93

Exhibit A

Skelly Penrose B Unit
40 Acre Five Spot Waterflood Project

The proposed project for the Skelly Penrose B Unit includes the implementation of a 40 acre five spot waterflood project in the central part of the unit. The purpose of the project is to investigate the potential of infill drilling and waterflooding in a 40 acre five spot pattern to increase the ultimate recovery from the Penrose portion of the Queen formation. The Penrose B Unit was unitized in 1965 with waterflood operations commencing in mid - 1966 on a 80 acre five spot waterflood pattern. Ultimate primary oil recovery from the unit was 1,775,000 barrels of oil with ultimate secondary oil recovery from the 80 acre five spot pattern of 1,742,000 barrels of oil. Based on the ultimate primary and secondary oil recoveries, a secondary to primary oil recovery ratio of 0.98 will be ultimately achieved from the Penrose portion of the Queen formation on the Skelly Penrose B Unit. Based on work done by T. Scott Hickman & Associates, the oil recovery ratio on the Skelly Penrose B Unit is similar to other 80 acre five spot waterflood projects in the Queen/Penrose formation.

In the work done by T. Scott Hickman & Associates (copy attached), the Queen formation was studied for possible redevelopment on 40 acre five spot waterflood patterns to increase oil recoveries. In this study, the West Dollarhide Queen Sand Unit was used as an analog to other Queen projects in Southeast Lea County. The West Dollarhide Queen Sand Unit was redeveloped from 80 acre five spot waterflood patterns to 40 acre five spot waterflood patterns starting in 1987. Results from the redevelopment project on the West Dollarhide Queen Sand Unit show that the ultimate secondary to primary ratio will increase from 0.44 to 2.03. Hickman concluded that the reason for the drastic increase in secondary oil reserves was due to high mobile oil saturations which is caused by poor vertical and areal sweep efficiencies. Poor vertical and areal sweep efficiencies are typical in the Queen formation of southeast Lea County due to lateral discontinuity, directional permeability, completion techniques, insufficient well density, and water quality.

Due to the results of the West Dollarhide Queen Sand Unit, and the findings in the T. Scott Hickman paper, it is concluded that there is areas of the Skelly Penrose B Unit that have high mobile oil saturations. The Skelly Penrose B Unit produces from the same Queen/Penrose formation as the West Dollarhide Queen Sand Unit. Based on the performance of the 80 acre five spot waterflood pattern, the waterflood project on the Skelly Penrose B Unit suffers from poor vertical and areal sweep efficiencies. By increasing the well density in the unit from a 80 acre five spot waterflood pattern to a 40 acre five spot waterflood pattern, vertical and areal sweep efficiencies would be increased. The change in waterflood pattern would result in improved oil recovery of 1 million barrels of oil due to the greater areal and vertical sweep efficiencies and would allow the waterflood to sweep areas in the unit which have not been swept in the past.

Exhibit P