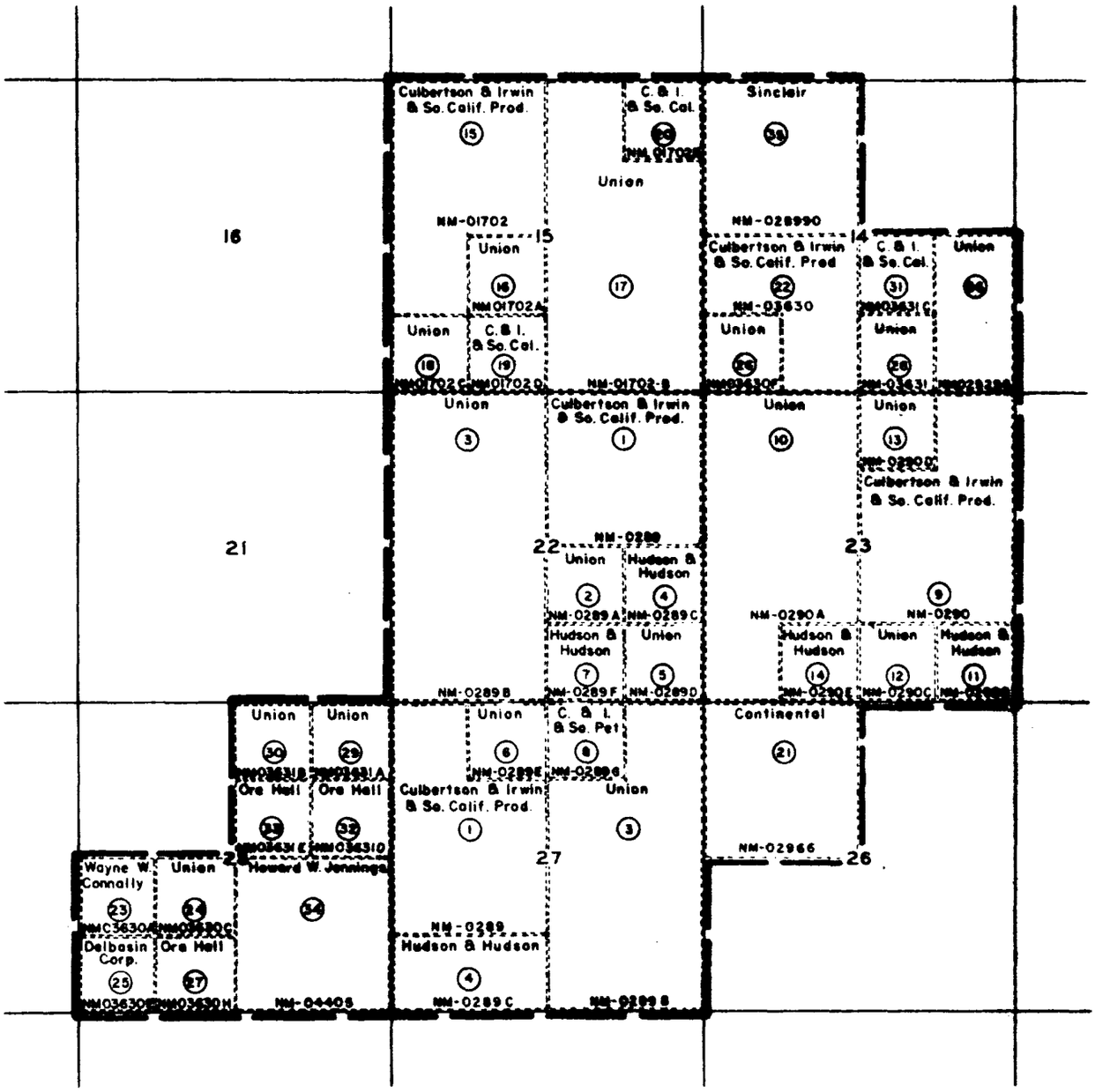

EXHIBIT "A"

TO ACCOMPANY

RED TANK UNIT AGREEMENT

LEA COUNTY, NEW MEXICO

——— UNIT BOUNDARY

(56) TRACT NUMBER

NOTE: ENTIRE UNIT IS FEDERAL ACREAGE
TOTAL ACRES IN UNIT -- 3680

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REPORT ON THE GEOLOGY OF THE PROPOSED RED TANK UNIT TO ACCOMPANY REQUEST FOR DESIGNATION OF UNIT

By: W. C. Goth
Geologist
Union Oil Company of California

SUMMARY

The Red Tank prospect is located in T-22-S, R-32-E, southwestern Lea County, New Mexico. Available well data indicate a structural nose or terrace to be present. A test of the Cherry Canyon formation in the Union #1 Federal Gilmore, high on the structure, proved the presence of a tight oil saturated sandstone. It is postulated that this represents the up dip limit of permeability for the sandstone and that porous, oil productive standstone is present down dip on the flank of the nose.

INTRODUCTION

General. Regionally, southeastern New Mexico may be considered as constituting the northwest quadrant of the large Permian basin of Texas and New Mexico. This basin is a geologic province that is poorly defined; however, during Permian time, the region was one of general subsidence. A series of over 12,000 feet of strata were deposited with many variations in the character of the sediments throughout the basin. The western portion of the Permian basin where maximum subsidence occurred is designated the Delaware basin. The Capitan reef, one of the best known Permian barrier reefs of the Southwest, formed around the periphery of the Delaware basin, separating the deep pontic beds of the basin from the lagoonal and evaporite strata of the shelf or backreef area.

Location. The Red Tank Unit is situated about three miles basinward of the Capitan reef in the Delaware basin in T-22-S, R-32-E, southwestern Lea County, New Mexico.

STRATIGRAPHY

General. The Permian stratigraphic sequence of the Delaware basin is complex. Only the basin facies of the Guadalupe series is discussed herein.

Guadalupe Series - Basin Facies. The Guadalupe series of the Delaware basin is represented by the Delaware Mountain Group which overlies the Bone Spring limestone of Leonard age and in turn is overlain by the Castile formation of Ochoa age. The Delaware Mountain Group consists of approximately 3500 feet of relatively homogenous gray-brown to green, fine grained, rounded, calcareous, arkosic sandstone with minor amounts of brown shale, tan, dense

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limestone, and brown, sandy dolomite. The group is devided into three formations of relatively equal thicknesses: Brushy Canyon (lower), Cherry Canyon (middle) and Bell Canyon (upper); however, the contacts of the three formations cannot be reliably established in the subsurface.

The objective for the proposed test is a sandstone in the Cherry Canyon formation. From the wells drilled in this area the following approximate section can be expected to be encountered:

Age and Lithology	Thickness
Quaternary, sand and gravel	800 - 1000'
Cretaceous, shale, limestone and sandstone	0 - 300'
Triassic, Dockum grp., red shale and sandstone	0 - 350'
Permian, Ochoa, Dewey Lake fm., ss and sh	0 - 350'
" " Rustler fm., dolomite and red beds	0 - 500'
" " Salado fm., salt and anhydrite	1000 - 3000'
" " Castile fm., anhydrite, salt and dolo	1500 - 2000'
Permian, Guadalupe, Delaware Mtn. Group - (3500'±):	
" " Bell Canyon fm., Lamar Ls mbr.	30 - 100'
" " Bell Canyon fm., Trap mbr, siltstone	10 - 15'
" " Bell Canyon fm., Ramsey sand mbr. (Pay)	0 - 70'
" " Bell Canyon fm., Ford shale mbr.	10 - 15'
" " Bell Canyon fm., Olds sand mbr. (Pay)	unk.
" " Cherry Canyon fm., ss, sh and ls (Pay)	1000'±

STRUCTURE

General. The rocks of the Delaware basin are relatively undeformed structurally except for a slight eastward tilt. Detail structure of the basin is largely unknown. However, the meager structural data suggest a predominantly northwest structural grain.

Red Tank Structure - Antelope Ridge Area. From the limited well control in this area, a structural nose or terrace is indicated by structure contours on the top of the Lamar limestone member of the upper Delaware Mountain Group. Since the Cherry Canyon sandstone substantially parallels the Lamar limestone, the structural configuration of the middle Delaware should be the same. A test in the Union #1 Federal Gilmore (SE/4 Sec. 21), located high on this structure, yielded heavily oil and gas cut mud in a Cherry Canyon sandstone at 7000 feet. Therefore, it is postulated that the section encountered in this well represents the up dip wedge out of permeability, and that the porous, oil productive middle Delaware sandstone will be found down dip on the flank of the nose. (See accompanying map.) The strike of this conjectured permeability barrier parallels the permeability barriers responsible for Delaware production on similar noses or terraces at Mason, Paduca, Tunstill, Malaga and El Mar.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

Hervey, Dow & Hinkle
Hinkle Building
Roswell, New Mexico

Attention: Mr. Clarence E. Hinkle

Gentlemen:

Your undated application filed with the Oil and Gas Supervisor, Roswell, New Mexico, on August 10, 1961, in behalf of Union Oil Company of California, requests the designation of 3,680 acres, more or less, in Lea County, New Mexico, as logically subject to exploration and development under the unitization provisions of the Mineral Leasing Act, as amended.

Pursuant to Unit Plan Regulations of December 22, 1960, 30 CFR 226.3 (1961 reprint) the land requested, as outlined on your land map marked Exhibit "A" Red Tank unit, Lea County, New Mexico, is hereby designated as a logical unit area.

Any unit agreement submitted for the area designated should require a well to test the Cherry Canyon formation of the Delaware Mountain Group, or to a depth of 7,500 feet. The 1961 reprint of the standard unit agreement should be used, modified only by replacing the "Fair Employment" section with:

> "Non-discrimination. In the performance of work under this agreement, the operator agrees to comply with the non-discrimination provisions of Executive Order 10925 (26 F.R. 1977)."

In he absence of any other type of land requiring special provisions, or of any objections not now apparent, a duly executed agreement identical with said form, modified only as outlined above, will be approved if submitted in approvable status within a reasonable period of time. However, notice is given that the right is reserved to deny approval of any executed agreement which, in our opinion, does not have full commitment of sufficient lands to afford effective control of unit operations.

When the executed agreement is transmitted to the Supervisor for approval, include the latest status of all acreage. In preparation of

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Exhibits A and B, follow closely the format of the sample exhibits attached to the 1961 reprint of the standard form.

Very truly yours,

Acting Director

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