BEFORE EXAMINER UTZ
OIL CONSERVATION
SINCLAIR EXHIBIT NO. 6
CASE NO. 3832

PROPOSED GUADALUPE RIDGE UNIT

EDDY COUNTY, NEW MEXICO

INTRODUCTION

The proposed Guadalupe Ridge Unit is located in extreme Southwest Eddy County, New Mexico, approximately 40 miles southwest of the townsite of Carlsbad. The proposed Unit Area is described as follows:

T-25-S, R-21-E - all of Sections 25, 26, 35, and 36

T-25-S, R-22-E - Section 20 - S/2, all of Section 21, Section 22 - W/2, all of Sections 28, 29, 30, 31, 32, and 33

T-26-S, R-21-E - all of Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, and 36

T-26-S, R-22-E - all of Sections 4, 5, and 6

The primary objective of the initial test will be the Strawn carbonate of Middle Pennsylvanian Age.

EXISTING PRODUCTION

There is no production within the proposed Unit Area. The nearest Strawn production is in the White City Strawn Gas Field, located in the SW/4, T-24-S, R-26-E, 28 miles northeast of the proposed location. Commercial Strawn gas production has been established by the Mobil No. 1 Barrett State, located in Section 18, Block 63, T-2, T & P RR Co Survey, Culberson County, Texas, designated as the Signal Peak Strawn Gas Field, being 16 miles southeast of the subject Unit.

STRATIGRAPHIC COLUMN

The stratigraphic column anticipated is documented in Exhibit No. 5. The initial test should encounter a major zone of transition sedimentation between the Northwest Shelf and the Delaware Basin. The Guadalupe and Leonard Series of the Middle Permian should consist primarily of reefal carbonates. The Wolfcamp Series of Lower Permian should also be affected by the transition zone, but to a lesser degree. The Cisco and Canyon Series of Upper Pennsylvanian will be extremely abbreviated or absent due to non-deposition, and the Strawn Series of Middle Pennsylvanian should be a well developed carbonate buildup. Exhibits Nos. 1, 4, and 5 further document the presence of favorable reservoir development within the Strawn carbonate.

STRUCTURE

Exhibit No. 1 is a subsurface structure map contoured on top of the Devonian formation. The Huapache fault complex oriented NW-SE represents the major structural component of the exhibit. The Guadalupe Ridge structure is located immediately southwest of the Huapache and is oriented northeast-southwest and represents the anomaly to be unitized. Exhibit No. 2 is a surface map showing the areal geology and structural interpretation as prepared by Geophoto Services, Inc., Denver, Colorado. Exhibit No. 2 was prepared from areal photographs. Generalized form-lining, utilizing the reliable dips on the Capitan and Carlsbad Limestone document the Guadalupe Ridge structure as being the largest untested surface structure in southeast New Mexico. The west margin of the Guadalupe structure is formed by the Dog Canyon fault, being a normal down to the west fault reflected on the surface and believed to extend into the Lower Paleozoic formations. Further evidence of northeast-

southwest structural alignment is found in the Bone Spring flexure exposed in the southeast portion of Block 66, T-1, T & P RR Co Survey, Culberson County, Texas, 12 miles southwest of the proposed Unit. Exhibit No. 1 documents the exposed portion of the Bone Spring flexure and projects this known structural component into the area being unitized. Additional structural documentation is presented in Exhibit No. 3, being a residual gravity survey, reflecting a major gravity maxima under the area being unitized.

TRAPPING FACTOR

The trapping factor for the primary objective is considered to be a combination of stratigraphic and structural conditions. Regional subsurface and surface control indicates the presence of a structural anomaly and regional stratigraphic studies of the Strawn carbonate indicate updip termination of reservoir quality dolomite, creating excellent stratigraphic trapping conditions.

PROPOSED ZONES OF PRODUCTION

The primary zone of prospective production is the Strawn carbonate. This formation was found to be productive in the White City Strawn Gas Field, Eddy County, New Mexico and the Signal Peak Strawn Gas Field, Culberson County, Texas. The quality of the Strawn carbonate reservoir is documented on Exhibit No. 1. Secondary objectives are considered to be the Paddock and Abo Reef trends of Middle Permian Age. Stratigraphic studies utilizing all of the available control indicate the above mentioned reef trends project through the Unit Area.

UNIT BOUNDARIES

The boundaries of the proposed Guadalupe Ridge Unit are based on several factors. The northwest boundary is governed by the updip termination of reservoir quality carbonate within the Strawn formation as documented in Exhibit No. 1. The southeast boundary represents the downdip limits of expected hydrocarbon production, utilizing information obtained on the Texaco No. 1 Culberson L-Fee, located in Section 45, Block 65, T-1, T & P RR Co Survey, Culberson County, Texas, and on the Gulf Oil Corporation No. 1 Mascal Wash Unit, located in Section 17, T-26-S, R-23-E. The northeast boundary has been determined by utilizing available subsurface, surface, and gravity studies, all of which depict saddling, believed to be representing the northeast limits of the Guadalupe structure. Stratigraphic studies indicate the Paddock and Abo Reef trends depart from the Guadalupe structure at this point. The southern boundary is represented by the New Mexico-Texas state line. It is believed the northwest, northeast and southeast boundaries are based on sound geologic principles, and the southern limit is justified on the strength of a major geographic and political boundary.

CONCLUSIONS

The proposed Guadalupe Ridge Unit is based on a combination of available structural and stratigraphic information. The Strawn carbonate, which is considered the primary objective, is productive northeast and southeast of the proposed Unit, and the potential for structural and stratigraphic entrapped hydrocarbons within the proposed Unit Area is a logical interpretation. The Unit Operator shall drill an adequate test well at an approved location to a depth of 7,000 feet or to a depth sufficient to completely test and evaluate the Strawn carbonate of Middle Pennsylvanian Age or until at a lesser depth unitized substances shall be discovered which can be produced in paying quantities.

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