

MR. DURRETT: Application of Union Oil Company of California for a unit agreement, Eddy County, New Mexico.

MR. HINKLE: Clarence Hinkle appearing on behalf of Union Oil Company; we have one witness, Arthur Lewis, we would like to have him sworn, please.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1, 2 & 3 marked for identification.)

MR. UTZ: Any other appearances?

A R T H U R V. L E W I S, J R., a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please?

A Arthur V. Lewis, Jr.

Q By whom are you employed, and in what capacity?

A Union Oil Company of California; District Geologist.

Q Have you ever testified before the Oil Conservation Commission?

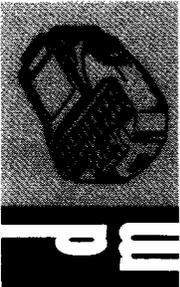
A I have not.

Q Are you a graduate petroleum engineer?

A I'm a graduate geologist, William's College, 1948.

Q How long have you been employed by Union Oil Company?

A Union Oil Company, 17 and a half years.



Q How much of the time that you have been with Union have your duties covered New Mexico or part of New Mexico?

A I worked in New Mexico for over three years.

Q You're familiar with operations in Southeastern New Mexico?

A Yes, sir.

Q Have you made a study of the North Huapache Unit Area in New Mexico?

A Yes, I have.

Q Are you familiar with the application of Union Oil in this case?

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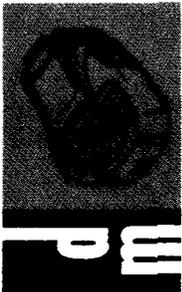
Q Mr. Lewis, refer to your Exhibit "A", Exhibit 1, and explain what it shows?

A This shows an outline of the proposed North Huapache Unit setting forth lands that are Federal Lands, and the lands that are State Lands. 78.57 percent of the land is Federal; 21.43 percent of the land is State.

Q Generally, in the region where is this area located with reference, say, to Carlsbad?

A Southwestern Eddy County, New Mexico, 23 or 24 miles West of the City of Carlsbad. The Indian Basin is on the 24 miles East of the area.

Q Is this area suitable and proper for unitization?



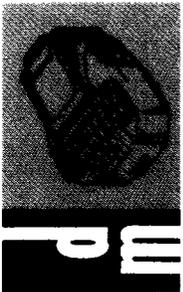
A Yes.

Q Has an area been tentatively approved by the State Land Office?

A Yes, it has.

Q Now, refer to Exhibit Number 2 and explain what this shows?

A This is a subsurface structural contour map of the Cisco Formation of the upper Pennsylvanian Age, contour interval of 100 feet. It shows in orange the area of the North Huapache Unit, it shows a portion of the Indian Basin gas field in the Northeastern part of the map. The data points were derived by combination of mechanical logs and it was identified as the top of the Cisco, and these points were identified as subsea datums. Paralleling and in front of the Huapache Flexure one of the ridges has an enclosure that has been proven by well control and in the Indian Basin Field starting around Section 4589, 22,835 feet, based on limited well control that is present in the area. Superimposed on this map is a green outline which is an aeromagnetic anomaly interpreted by the California office covering both the area of the Indian Basin gas field and North Huapache Unit. The shaded blue outline on the North and Southbound direction limits the probable extent of porosity in the Cisco Canyon Reef which is productive of the Indian Basin gas field. All the data was prepared by me with the



exception of the aeromagnetic anomaly.

Q Does Exhibit 1 show all the wells that have been drilled in this area?

A Yes, sir, the wells are identified by code in the lower left corner of the map as to those wells which produce from the Cisco Canyon. One well produces from the Bend Formation, Section 622 South, 23 East, and the wells that produce from the Morrow are circled in darker pencil.

Q Do you have this information that has been drawn from your subsurface interpretations and information obtained from these wells?

A Yes, sir.

Q In your opinion does the unit area cover all or substantially all of the geological feet or anomaly which you have indicated?

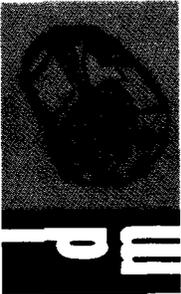
A Yes, sir.

Q And in the event of the production the unit would give you effective control of the unit area of the old pool?

A Yes.

Q Does Union propose to drill a test well on the unit area?

A We propose to drill a well located in the Northeast Quarter of Section 23, Township 22 South, Range 23 East. The location is 1980 from the North and East, but if surface



conditions won't permit this well 1980 from the East and 1980 from the North--

Q How deep will this be drilled?

A 1800 feet, Cisco Canyon test.

Q What will this well penetrate over in the Cisco Canyon?

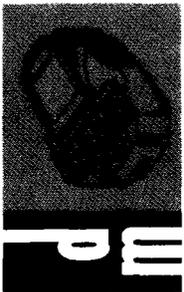
A The other potential formation is the Wolfcamp. This well was completed as a gas well that was plugged before we obtained any commercial products from it.

Q Is there anything else that you would like to bring out with respect to this exhibit?

A The line of cross section indicated on the map extends from Inman's Number 1 Cawley Draw Well across to the North Huapache Unit in Section 122 South, 23 East, and this cross section, our Exhibit 3.

Q Refer to Exhibit 3 and explain what it shows.

A Exhibit 3 is a structural cross section drawn from Inman's Number 1 Cawley Draw Unit on the left-hand end on the West of the Huapache Unit and on the right-hand side to the Southeast. Only the formations from the lower part of the Wolfcamp to the upper part of the Chester are included on the cross section. As I said it's a structural cross section. The formations in the area are identified by name; Wolfcamp, Cisco, Canyon, Strawn, Bend, Morrow and Chester. Within the



Cisco Canyon Formation I have colored in blue the probable extent of the Dolomite phases of the Cisco Canyon which is expected to produce. The configuration of the Dolomite buildup was obtained in the Indian Basin gas field and projected to the west.

Q You believe that to be a reasonable interpretation from the wells and all the data that's available?

A Yes, I do.

Q Are you familiar with the unit agreement which has been filed with the application in this case?

A Yes, sir.

Q Is this the same form of unit agreement or substantially the same form which has generally been used where State and Federal Lands are involved?

A Yes, it is.

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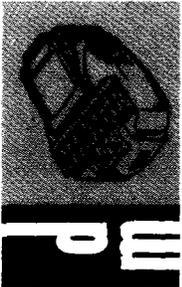
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A Yes.

Q Will the unit agreement promulgate easy recovery of the substance?



A Yes.

MR. HINKLE: We would like to offer Exhibits 1, 2 and 3.

(Whereupon, Applicant's Exhibits 1, 2 and 3 marked for identification.)

MR. UTZ: Without objection they will be entered.

(Whereupon, Applicant's Exhibits 1, 2 and 3 admitted into evidence.)

MR. HINKLE: That's all I believe we have.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Lewis, I noticed on your cross section that you use the Bend Morrow nomenclature as synomous, however on Exhibit 2 you show nomenclature for a Bend nomenclature for the Morrow.

A The reason I did this, the exhibit was prepared for company use and Oil Conservation Commission use and I can't satisfactorily divide the exact dividing point between the Bend and the Morrow, it's a matter of conjecture. The basal that's producing in the wells is identified as Morrow Producer Humbles' 10, Huapache and others. It's a sandstone base Morrow and we know it's Morrow. The wells producing in Section 622 South, 23 East are in the zone that we know as Bend or Atoka, but we don't know for usre where the point is



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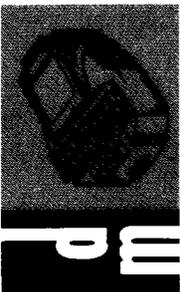
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A Yes, sir.

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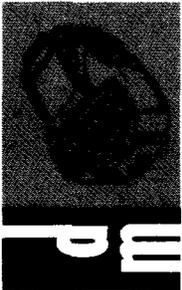
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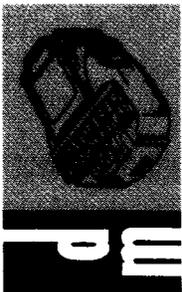
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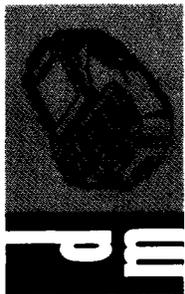
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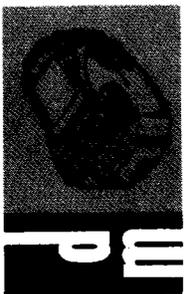
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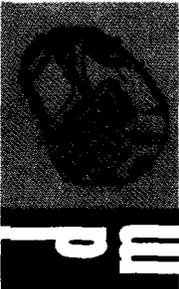
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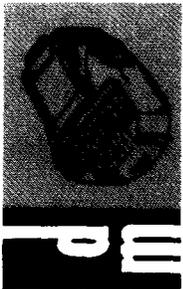
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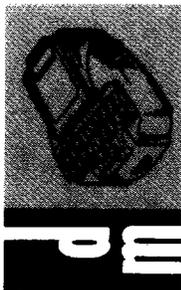
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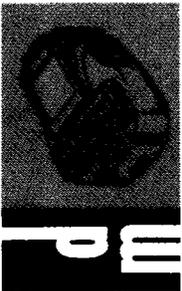
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