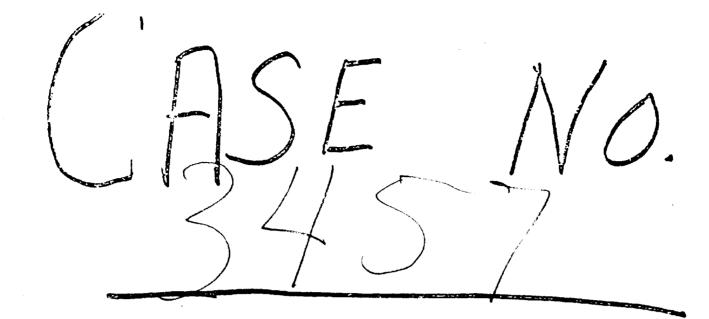
CASE 3457: Application of Kern County Land Company for special pool rules for the CHAVEROO-SAN ANDRES POOL.



APPlication,
Transcripts,
SMAIL Exhibits
ETC

## KERN COUNTY LAND COMPANY

<u>등</u>

600 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94108
[415] 397-4100

September 29, 1966

New Mexico Oil Conservation Commission State Land Office Sante Fe, New Mexico

Re: Case No. 3457

Application of Kern County Land Company for special pool rules, Roosevelt and Chaves Counties, New Mexico

#### Gentlemen:

We find that the following corrections should be made in the transcript of Case No. 3457, heard by the NMOCC on September 14, 1966:

page 4, lines 1 and 7: Edward P. Burtchaell page 7, line 10, 6th word: "pi" instead of "high" page 7, line 10, 6th word: "type" instead of "tight" page 7, line 17, 1st word: "pi" instead of "high" page 7, line 18, 3rd word: "pi" instead of "high" page 9, line 17, 1st word: page 10, line 18, 2nd word: "after a" instead of "of" page 15, line 5, 3rd word: "+150" instead of "150"
page 16, line 10: insert the word "depletion" between the words
"pressure" and "is" page 17, line 1, 8th word: "location" instead of "spacing" page 18, line 1, last word: page 18, line 9, 5th word: page 25, line 14, 7th word: "developed" instead of "broken" "from" instead of "below" "type" instead of "tight" "testified" instead of "testify" page 28, line 15, 7th word: "weeks" instead of "wells" page 29, line 5, llth word: page 29, line 17, 3rd word: "six were 40" instead of "640" page 33, line 12: insert the word "decline" between the words "a" and "curve" "question" instead of "yes" page 39, line 12, 6th word: "Mr. E. P. Burtchaell" instead of page 54, line 16, 3rd word: "Mr. A. P. Virgil"

Yours very truly,

E. P. Burtchaell Manager, Oil Production and Engineering

JLT:sk

cc: Mr. James Sperling

# GOVERNOR JACK M. CAMPBELL CHAIRMAN

## State of New Mexico

## Gil Conservation Commission

LAND COMMISSIONER GUYTON 8. HAYS MEMBER



SANTA FE

STATE GEOLOGIST A. L. PORTER, JR, SECRETARY - DIRECTOR

September 22, 1966

Mr. James E. Sperling	Re:	Case No.	3457
Modrall, Seymour, Sperling, Roehl &	ž.	Order No.	R-3120
Harris		Applicant:	
Attorneys at Law			
Post Office Box 466		KERN COUNT	TY LAND COMPAN
Albuquerque New Meyico			

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

ir/		
Carbon copy of order also sent to:		
Hobbs OCC ×		
Artesia OCC x Artec OCC		
OTHER Guy Buell, Richard Morris, Ronald Jacobs, Pete Hoffman, Paul Meek and Bob Baker	Ivan D.	Geddie

## PRECION HOW OIL CONFICENCY ON THE STATE OF BEW BEXICO

IN THE MATTER OF THE GIVERING CALLED BY THE OIL CONSERVATION COMMISSION OF NUM MEXICO FOR THE PURTOSE OF CONSIDERING:

CASE No. 3457 Order No. R-3120

RAPPLICATION OF REAR COUNTY LAND COMPANY FOR SPECIAL POOL RULES, ROOSSVELT AND CHAVES COUNTIES, NEW MERICO.

## ORDER OF THE COMMISSION

## BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 14, 1966, at Santa Fs. New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 22nd day of September, 1966, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises.

## FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Kern County Land Company, seeks the promulgation of special rules and regulations for the Chaveroo-San Andres Fool, Roosevelt and Chaves Counties, New Mexico, including a provision for 80-acre provation units and fixed well locations.
- (3) That the applicant has not established that the wells in the Chaveroo-San Andres Pool can efficiently and economically drain and develop 80 acres or that the establishment of special rules and regulations would prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, or otherwise prevent waste or protect correlative rights.

-2-CASE No. 3457 Order No. R-3120

(4) That the subject application should be denied.

## IT IS THEREFORE ORDERED:

- (1) That the subject application is hereby denied.
- (2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem naces-sary.

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

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

JACK M. CAMPBELL. Chairman

GUYTON B. HAYS, Mamber

A. L. PORTER, Jr., Member & Secretary

## DOCKET: REGULAR MEARING - WEDNESDAY - SEPTEMBER 14, 1966

OIL CONSERVATION COMMISSION - 9 A.M., MORGAN HALL, STATE LAND OFFICE BUILDING,
SANTA FE, NEW MEXICO.

- ALLOWABLE: (1) Consideration of the oil allowable for October, 1966.
  - (2) Consideration of the allowable production of gas for October, 1986, from thirteen prorated pools in Lea, Eddy, and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for October, 1966.
- CASE 3455: Application of Benson-Montin-Greer Drilling Corporation for division of an oil pool into two pools and for special rules for each, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the division of the Puerto Chiquito-Gallup Oil Pool into two separate pools, being the East Puerto Chiquito-Mancos Oil Pool and the West Puerto Chiquito-Mancos Oil Pool. Applicant further proposes that the present temporary 160-acre proration units for the Puerto Chiquito-Gallup Oil Pool be made permanent for the proposed East Puerto Chiquito-Mancos Oil Pool and that temporary pool rules for the proposed West Puerto Chiquito-Mancos Oil Pool be adopted, said rules to provide for 320-acre proration units in said pool for a period of three years. Applicant seeks an administrative procedure whereby interference tests could be conducted in the proposed West Puerto Chiquito-Mancos Oil Pool, including a provision for allowable transfer among wells.

This case will be continued to the November 16, 1966, hearing, and the present temporary rules will remain in effect until that date.

- CASE 3456: Application of Humble Oil & Refining Company for an unorthodox oil well location and a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Bowers "A" Federal Well No. 17 as a development oil well in the Ogallala reservoir. Said well to be located 1815 feet from the South and East lines of Section 30, Township 18 South, Range 38 East, Lea County, New Mexico, and to have dedicated to it a 20-acre non-standard oil proration unit comprising the S/2 of the NW/4 SE/4 of said Section 30.
- CASE 3457: Application of Kern County Land Company for special pool rules, Roosevelt and Chaves Counties, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Chavaroo-San Andres Pool, Roosevelt and Chaves Counties, New Mexico, including a provision for 80-acre proration units and fixed well locations. Applicant proposes that the first well on an 80-acre unit in sections lying west of the township line between Townships 33 East and 34 East, be located in the NW/4 or SE/4 of the governmental quarter section and that wells drilled east of said township line be located in the NE/4 or SW/4 of a governmental quarter section.
- CASE 3458: Southeastern New Mexico nomenclature case calling for an order for the extension and redesignation of certain pools in Lea County, New Mexico:
  - a) CHANGE the name of the North Vacuum-Devonian Pool to the Mid-Vacuum-Devonian Pool.

## September 14, 1966, Regular Hearing.

- b) EXTEND the Bough-San Andres Gas Pool to include therein:

  TOWNSHIP 9 SOUTH, RANGE 35 East, NMPM
  SECTION 14: SE/4
- c) EXTEND the Lazy J-Pennsylvanian Pool to include therein:

  TOWNSHIP 13 SOUTH, RANGE 33 EAST, NMPM
  SECTION 36: NW/4
- d) EXTEND the East Mason-Delaware Pool to include therein:

  TOWNSHIP 26 SOUTH, RANGE 32 EAST, NMPM
  SECTION 20: NW/4
- e) EXTEND the Midway-Abo Pool to include therein:

TOWNSHIP 17 SOUTH, RANGE 37 EAST, NMPM SECTION 18: N/2 and N/2 S/2

JACK GRYNBERG AND ASSOCIATES PETROLEUM, GEOLDGICAL AND GEOPHYSICAL ENGINEERS M, COUR BUNDING . DENVER COLORADO 80202 . PHONE 303-SIT INTERNATIONAL TRADE MA CAMP AT COMMON ST. DRLEANS, LOUISIANA 70112 PHONE 504-524-4389 September 12, 1966 New Mexico Oil Conservation Commission State Capitol Santa Fe, New Mexico Gentlemen: This is just a note to inform you that I am supporting the 80 acre spacing rule for the Chaveroo field in Roosevelt County, New Mexico. I am the owner of acreage which is comprised in part of the SE/4, Section 13, SE/4, Section 24, T - 7 S - R 32 E.

Very truly yours,

JACK GRYNBERG AND ASSOCIATES

Jack Grynberg

" SEP 15 AH 8 13

MANN OFFICE OF

JG:mk

Don M. FEDRIC

LAW OFFICES
GEORGE H. HUNKER, JR.
418 HINKLE BUILDING

ROSWELL, NEW MEXICO

505 622-3405 Post Office Box 2086

September 13, 1966

Governor Jack M. Campbell, Chairman Land Commissioner Guyton B. Hays, Member Director A. L. Porter, Jr., Member New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

Re: Chaveroo-San Andres 80-acre spacing.

#### Gentlemen:

As an owner of royalty in Sections 6 and 19, Township 7 South, Range 34 East, N.M.P.M., Roosevelt County, I object to the granting of Kern County Land Company's application for 80 acre proration units in Township 7 South, Range 34 East. In my judgment, the correlative rights of one royalty owner are not going to be adequately protected.

Certainly, very clear and convincing proof should be given before the Commission could look with favor upon the application Kern County has filed.

Respectfully submitted,

George H. Hunker, Jr.

GHH: cá

**Mobil Oil Corporation** 

P.O. BOX 633 MIDLAND, TEXAS 79701

September 12, 296

' Mr. A. L. Porter New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

> CASE NO. 3457 - APPLICATION OF KERN GOUNTY LAND COMPANY FOR SPECIAL POOL RULES FOR THE CHAVAROO-SAN ANDRES POOL ROOSEVELT & CHAVES CNTS, NEW MEXICO

Dear Mr. Porter:

Mobil Oil Corporation, as the owner of substantial acreage in the vicinity of Chavroo-San Andres Pool, concurs in and recommends approval of the application of Kern County Land Company for special rules. The drilling of future wells on a pattern consistent with their drainage capability will minimize waste of economic resources and allocation of allowables on the basis of developed acreage will protect correlative rights.

Yours very truly,

Ira B. Stitt, Jr.

Division Operations Engineer

PWK/wt

## BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE No. 3235 Order No. R-2902

APPLICATION OF JOSEPH O. WALTON TO REMOVE AND MARKET OIL FROM THE OGALALLA FORMATION, LEA COUNTY, NEW MEXICO.

#### ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 14, 1965, at Hobbs, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 4th day of May, 1965, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

## FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Joseph O. Walton, seeks authority to remove and market oil from the Ogalalla formation in Section 30, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico, without restriction concerning the method of operation or quantity of oil recovered.
- (3) That the applicant proposes to recover crude oil from existing water wells completed in the Ogalalla formation and water wells to be drilled and completed in the Ogalalla formation in said Section 30.
- (4) That the Ogalalla formation in said area contains fresh water supplies designated by the State Engineer and that

crude oil in order to prevent waste and protect fresh water supplies designated by the State Engineer. IT IS THEREFORE ORDERED: (1) That crude oil may be recovered from existing water wells completed in the Ogalalla formation and water wells to be drilled and completed in the Ogalalla formation in Section 30, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico. (2) That said crude oil may be marketed provided Commission Form C-104 has been filed with the Commission's Hobbs District Office stating the name of the seller, the name of the transporter, the amount of oil to be sold, and the location of the water well from which the oil was recovered. (3) That each person or persons recovering crude oil under the provisions of this order shall keep a daily record of the amount of oil recovered from each water well, and shall file a monthly report, in duplicate, with the Commission's Hobbs District Office stating the amount of oil recovered and the amount of oil sold from each water well during the month. (4) That the Commission will not determine who has the right to recover said crude oil or the title to said crude oil. (5) That 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 JACK M. CAMPBELL, Chairman GUYTON B. HAYS, Member SEAL A. L. PORTER, Jr., Member & Secretary esr/

the presence of crude oil in said formation may constitute a

(5) That the Commission lacks jurisdiction to determine who has the right to recover said crude oil or the title to said crude oil but should authorize the recovery and marketing of said

CASE No. 3235 Order No. R-2902

hazard to said water supplies.

LAW OFFICES OF

J. R. MODRALL
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DANIEL A. SISK
LELAND S. SEDBERRY, JR.
ALLEN C. DEWEY, JR.
FRANK H. ALLEN, JR.
JAMES P. SAUNDERS, JR.

JAMES A. PARKER
HENRY G. COORS
JOHN R. COONEY
KENNETH L. HARRIGAN

## MODRALL, SEYMOUR, SPERLING, ROEHL & HARRIS

SIMMS BUILDING

P. O. BOX 466

ALBUQUERQUE, NEW MEXICO 87103

AUGUSTUS T. SEYMOUR (1907-1965)

TELEPHONE 243-45II

August 16, 1966

166 Aug 17 AM 7 58

Jac 7 3457

State of New Mexico Oil Conservation Commission Post Office Box 2088 Santa Fe, New Mexico

Gentlemen:

I enclose herewith, in triplicate, Application of the Kern County Land Company for adoption of Special Pool Rules for the Chaveroo (San Andreas) Pool, Roosevelt and Chavez Counties, New Mexico, to provide for 80-acre drilling and spacing units and for oil allowables based on such spacing, and request that this matter be set for hearing before your Commission.

Very truly yours,

James E. Sperling

JES:fm

cc: Mr. Jack L. Tindall

Kern County Land Company

DOCKET MAILED

## ATWOOD & MALONE

LAWYERS

JEFF D ATWOOD (1883-1960) NOSS L MALONE
CHARLES F MALONE
CHARLES F MALONE
RUSSELL D. MANN
PAUL A COOTER
BOB F, TURNER
ROBERT A, JOHNSON JOHN W. BASSETT, JR.

766 SEP 7 PH 2 20

P. O. DRAWER 700 TELEPHONE 505 822-6201 SECURITY NATIONAL BANK BUILDING ROSWELL, NEW MEXICO 88201

September 6, 1966

Mr. A. L. Porter, Secretary New Mexico Oil Conservation Commission State Land Office Santa Fe, New Mexico

State-wide Hearing, September 14, 1966 Re:

Dear Mr. Porter:

For Pan American Petroleum Corporation, we enclose our Entry of Appearance in Case No. 3457.

Thank you and with regards,

Very truly yours,

ATWOOD & MALONE

CFM:md encl. cc:

J. K. Smith (2)

By: Warles Dualous

## BEFORE THE OIL CONSERVATION COMMISSION

#### STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF KERN COUNTY LAND COMPANY FOR SPECIAL POOL RULES FOR THE CHAVEROO-SAN ANDRES POOL, ROOSEVELT AND CHAVES COUNTIES, NEW MEXICO. -(8 SEP 7 PH 3 36 No. 3457

## ENTRY OF APPEARANCE

The undersigned, Atwood & Malone, of Roswell, New Mexico, hereby enters its appearance in the above styled cause as co-counsel with Guy Buell, Esquire, of Fort Worth, Texas, for Pan American Petroleum Corporation.

DATED at Roswell, New Mexico, this 6th day of September, 1966.

ATWOOD & MALONE

Post Office Drawer 700

Roswell, New Mexico

TELEPHONE LA 6-0586 AREA CODE 214

ADAM K. GRAFE ASSOCIATES, INC.

CONSULTING ENGINEERS

-8

3900 LEMMON AVENUE DALLAS, TEXAS 75219

August 22, 1966

Che 3457

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

Gentlemen:

We are in receipt of a letter from Kern County Land Company advising that they will seek 80-acre spacing in the Chaveroo-San Andres Field, Roosevelt and Chaves Counties, New Mexico.

You are well aware that all oil development to date has been on 40-acre spacing and in excess of 200 wells have been completed on 40-acre spacing.

As a producer in the Chaveroo Field, we cannot agree that the reservoir experience of Kern County can be arbitrarily expanded to represent the field as a whole with any degree of accuracy. The history of well completions to date reveals anything but homogenous reservoir conditions for the field. We also have serious doubts that a reservoir that required fracturing for successful completions can be adequately drained on an 30-acre spacing.

We cannot oppose Kern County's desire to develop their holdings on 80-acre spacing. However, we do oppose their application for a factor of 2.00 for allowable purposes for 80-acre proration units. We feel that a factor of 1.25 for proration purposes should be sufficient incentive for Kern County to test the validity of their theory. We would further propose that this 1.25 factor remain in effect for a period of one year after which the case could be reopened and facts be re-examined whether Kern County is justified in a 2.00 factor or whether their spacing should be reduced to 40 acres.

Sincerely yours,

ORIGINAL SIGNED BY JOE H. WARREN, Ja.

Joe H. Warren, Jr.

JHWJr:kg

cc: Kern County Land Company

DOCKET MAILED

7-j-66 M-

Core Elle



TENNECO OIL COMPANY · P. O. BOX 1031 · 1800 WILCO BUILDING MIDLAND, TEXAS 79701

August 31, 1956

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Secretary

RE: Special Rules and Regulations

Chaveroo-San Andres Pool

Chaves and Roosevelt Counties, New Mexico

#### Gentlemen:

We have received and do support the proposed special rules and regulations for the Chaveroo-San Andres Pool as set forth by Kern County Land Company.

Yours very truly,

TENNECO OIL COMPANY

A. W. Lang

District Production Superintendent

RLL:pt

Duffert

Seemby DX Oil Sompony

Production Department

DX

August 25, 1966

PG-6

Matism R. Loss Matisms, Unitration and Cost real on

> Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

Attention: Mr. A. L. Porter

Re: Chaveroo (San Andres) Field Chaves & Roosevelt Counties,

New Mexico

## Gentlemen:

Please be advised that Sunray DX Oil Company has reviewed the Special Rules and Regulations to be proposed by Kern County Land Company for the Chaveroo (San Andres) Field in Chaves and Roosevelt Counties, New Mexico.

As an operator in the subject pool, Sunray requests that the Oil Conservation Commission adopt the rules as proposed by the applicant.

Very truly yours,

SUNRAY DX OIL COMPANY

William R Loar

RCS/rwd

Auf po



3457

Mr. A. L. Porter, Jr. Secretary
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Proposed 80-acre spacing by Kern County Land Co.
Chaveroo Pool, New Mexico

Dear Mr. Porter:

We have been advised that Kern County Land Company has before the Commission a proposal for 80-acre spacing (well spacing) in the Chaveroo area.

Please be advised that Geror Oil Ltd., 1962 is in accord with 80-acre spacing, as signified by our wells in Section 19. We are presently drilling in Section 27 to conform with the 80-acre pattern.

Your consideration of the proposal will be greatly appreciated.

Very truly fours,

Seror Oil Ltd., 1962

REG:fg

DOCKET WELLED

Date 7-1-60

//L\_

## BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF KERN COUNTY LAND COMPANY FOR ADOPTION OF SPECIAL POOL RULES FOR THE CHAVEROO (SAN ANDREAS) POOL, ROOSEVELT AND CHAVEZ COUNTIES, NEW MEXICO, TO PROVIDE FOR 80-ACRE DRILLING AND SPACING UNITS AND FOR OIL ALLOWABLES BASED ON SUCH SPACING.

case no. 3457

#### APPLICATION

Comes now KERN COUNTY LAND COMPANY, a corporation authorized to do business in the State of New Mexico, hereinafter called "Applicant", and states as follows:

I

Applicant is the owner of interests in and is the operator of certain wells producing oil from the San Andreas Formation in the Chaveroo Pool in Roosevelt and Chavez Counties, New Mexico, which said pool has been previously designated by this Commission and is governed by statewide rules relating to spacing and allowables as adopted by this Commission.

II

Special pool rules and regulations should be adopted concerning the drilling of oil wells in said pool and the dedication of acreage thereto and the production therefrom. A proration unit should be established consisting of two Quarter-Quarter Sections comprising eighty (80) acres, more or less, with wells drilled in Sections lying West of the Township Line between Townships 33 East and 34 East to be located in the Northwest Quarter or the Southeast Quarter of a given Governmental Quarter Section and as to Sections lying East of that Township Line, the spacing pattern should consist of wells to be located in either the Northeast Quarter or the Southwest Quarter of a given Governmental Quarter Section.

The horizontal limits of the Chaveroo (San Andreas) Pool constitutes a common oil reservoir and the geological and engineering data pertaining to the San Andreas Formation indicates that one well will efficiently and economically drain the recoverable oil in place in said Formation underlying an area in excess of eighty (80) acres. A drilling and spacing unit for oil wells drilled to the San Andreas Formation should be composed of two (2) quarter-quarter sections according to United States Public Land Survey containing approximately eighty (80) acres. No oil well should be drilled on such drilling unit on which another oil well has been completed or approved for completion in said pool. Allowables for said pool should be based on eighty-acre spacing.

IV

The establishment of drilling and spacing units as herein requested is necessary for the orderly development of a common source of supply in said pool as the same is now constituted or may later be extended. The establishment of such drilling and spacing units will protect the correlative rights of all parties affected, will prevent waste, will eliminate the drilling of unnecessary wells and will promote the recovery of oil from said pool in an efficient and economical manner.

V

The rules herein requested should be promulgated on a temporary basis and the Commission, on its own motion, should provide in said rules for a further hearing approximately twelve (12) months from the date said special rules are adopted to consider additional information and engineering data following further development on eighty-acre spacing.

WHEREFORE, Applicant respectfully requests that this matter

be set for hearing after due notice as prescribed by law and upon such notice and hearing, Applicant requests that the Commission issue its Order establishing special pool rules for the Chaveroo (San Andreas) Pool providing for 80-acre drilling and spacing units and for oil allowables based on such spacing, and that the Order provide that said rules be temporary subject to review in twelve (12) months, and further provide for such other matters as may be pertinent following hearing.

DATED this / day of August, 1966.

KERN COUNTY LAND COMPANY

By Its Attorneys:

MODRALL SEYMOUR SPERLING ROEHL & HARRIS

y XI(

Attorneys for Applicant

Post Office Box 466 1200 Simms Building

Albuquerque, New Merico

LAW OFFICES

CLARENCE E.HINKLE W.E.BONDURANT, JR. S. B. CHRISTY IV LEWIS C. COX.JR. PAUL W. EATON, JR. CONRAD E. COFFIELD HAROLD L. HENSLEY, JR.

MICHAEL R. WALLER

HINKLE, BONDURANT & CHRISTY

600 HINKLE BUILDING

ROSWELL, NEW MEXICO 88201

November 15, 1966

MIDLAND, TEXAS OFFICE 521 MIDLAND TOWER (915) MU 3-4691

OF COUNSEL:HIRAM M. DOW

TELEPHONE 622-6510 AREA CODE 505 POST OFFICE BOX 10

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico

## Gentlemen:

We return herewith Exhibits 1-8, inclusive, which were borrowed from you by our Mr. Clarke; these Exhibits are in connection with the Kern County Land Co. application to the NMOCC for 80 acre spacing in the Chaveroo Field (Case No. 3457).

We thank you for the use of these Exhibits.

Yours very truly,

HINKLE, BONDURANT & CHRISTY

HLH:jy Encls.

# RESERVOIR DATA CHAVEROO SAN ANDRES POOL CHAVES & ROOSEVELT COUNTIES, N.M.

## DISCOVERY:

Champlin #1 Hondo State Completed 3-20-65 IP: Swabbed 148 BOPD and 2 BWPD; 24 API, GOR - 810

#### PRODUCTION:

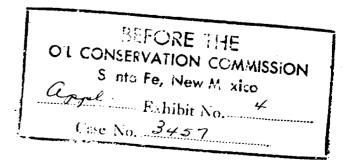
Cumulative thru July 31, 1966 .. 1,234,000 bbl oil .. 443,000 bbl water .. 951,000 MCF gas

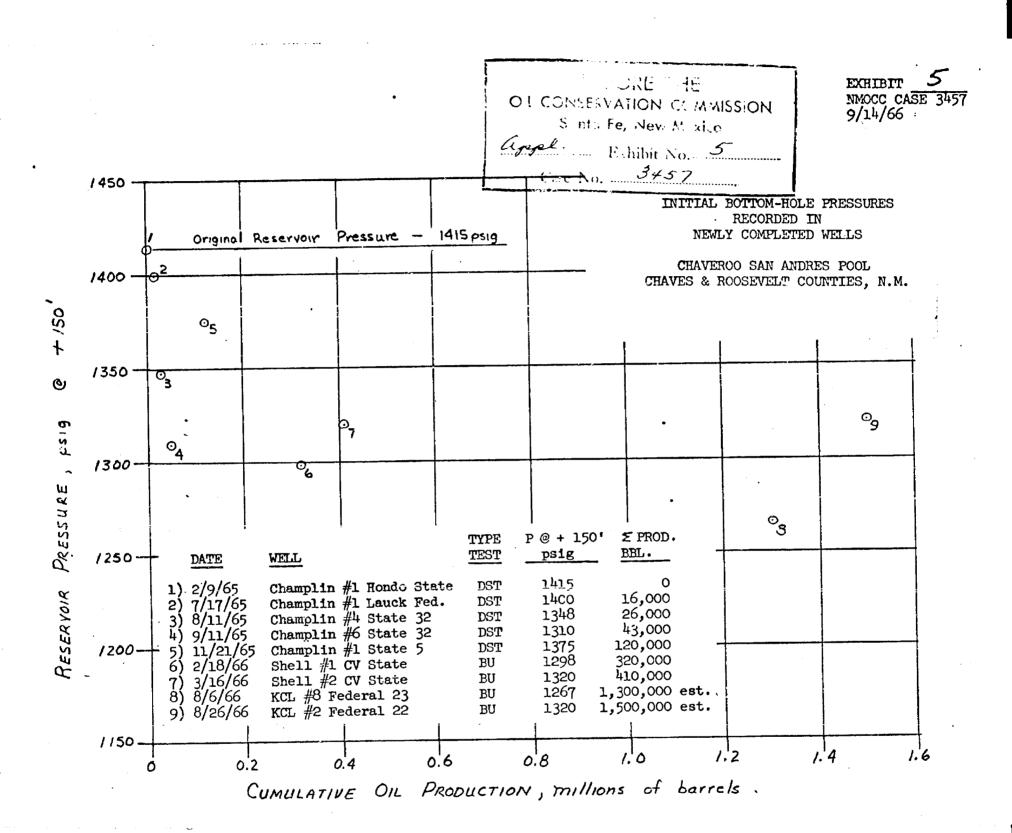
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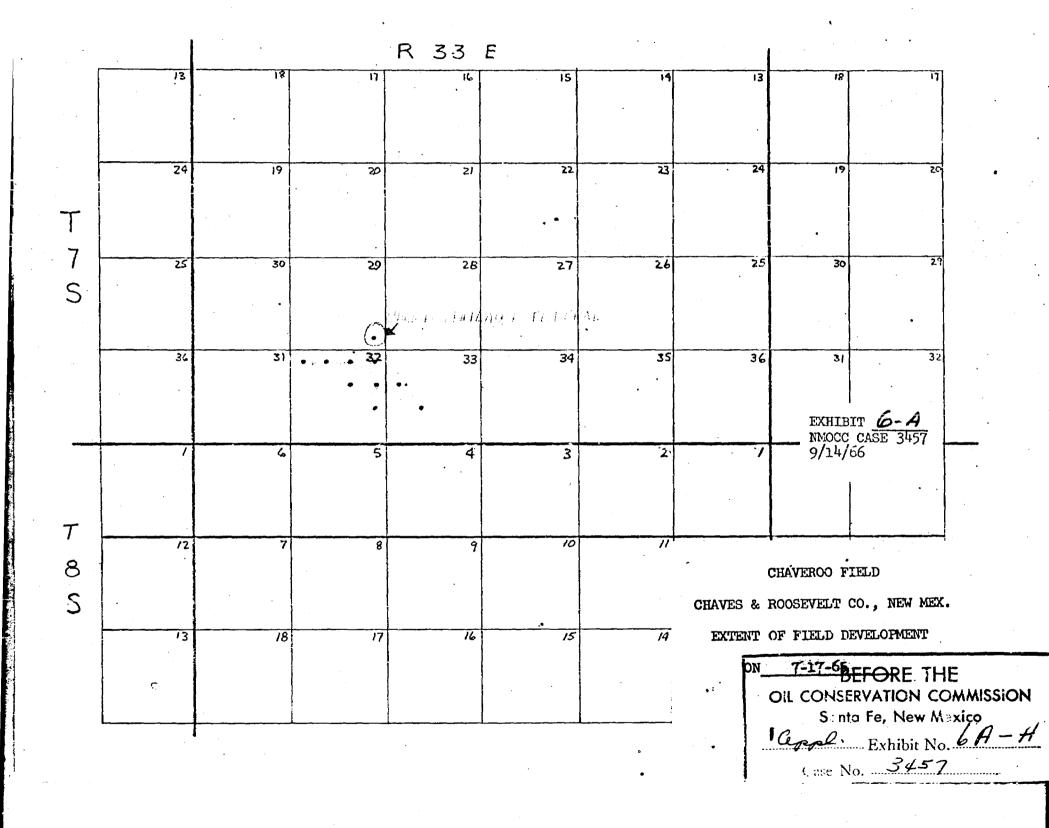
At September 1, 1966 - 228 wells completed

## FORMATION CHARACTERISTICS:

## FLUID CHARACTERISTICS:





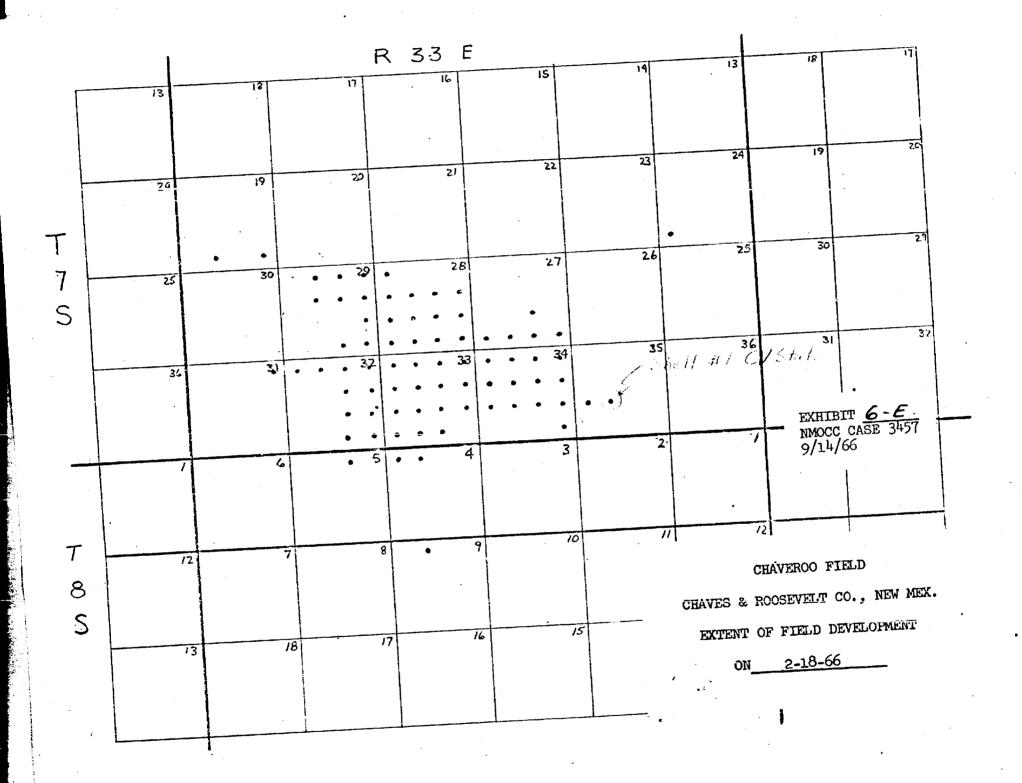


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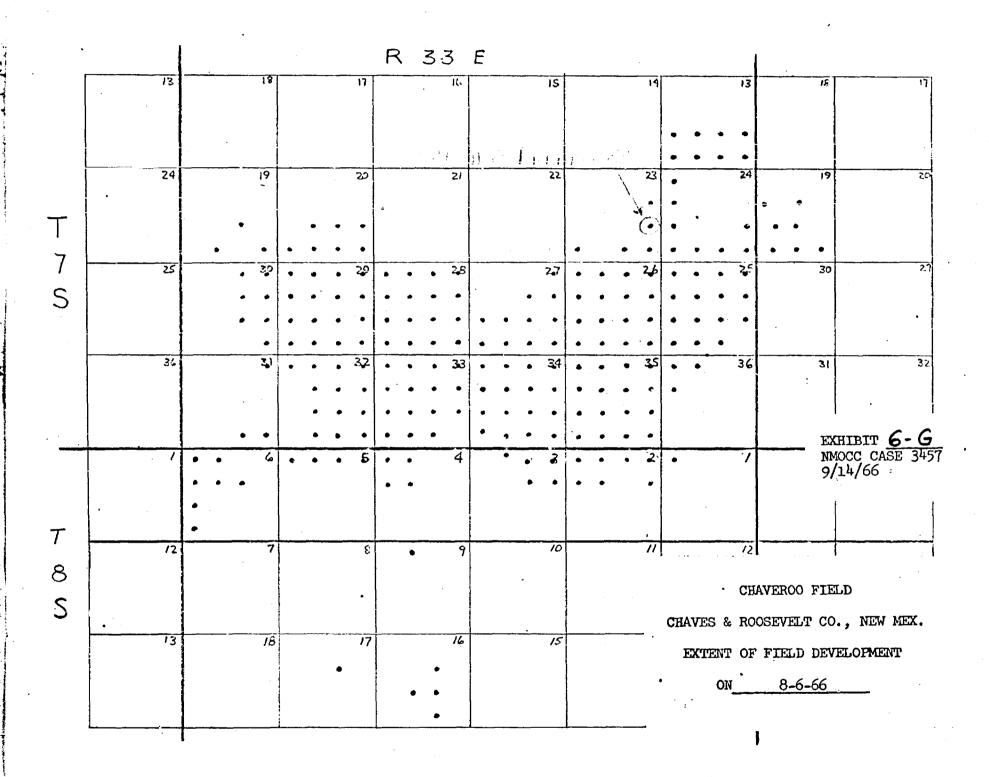
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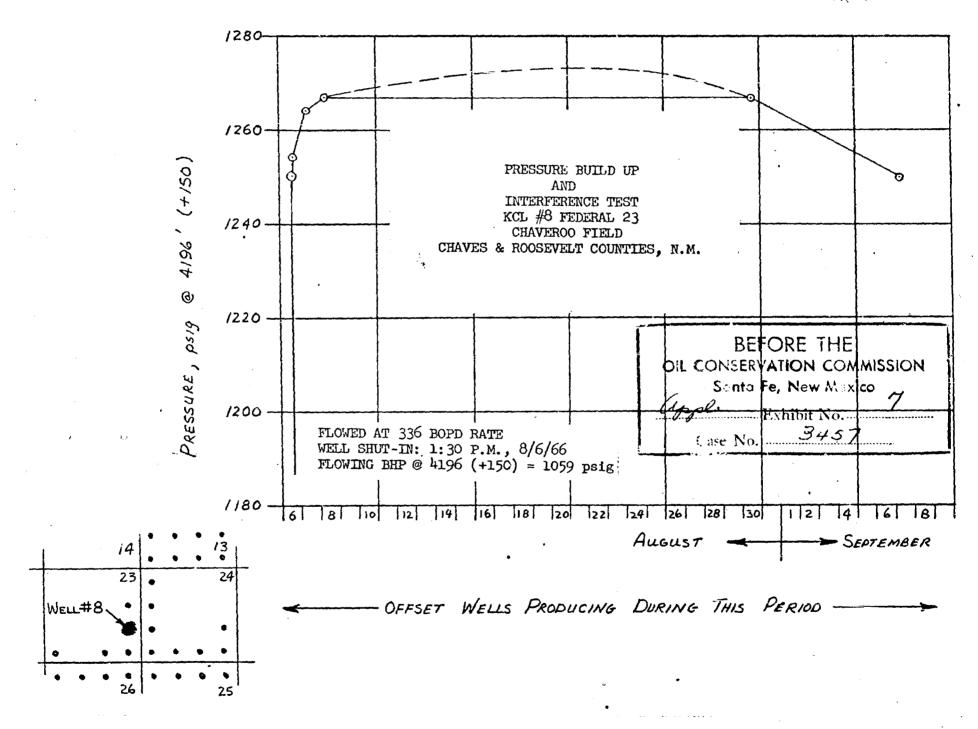


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# PROPOSED SPECIAL RULES AND REGULATIONS FOR THE CHAVEROO-SAN ANDRES POOL

- RULE 1. Each well completed or recompleted in the Chaveroo-San Andres Pool or in the San Andres formation within one mile of the Chaveroo-San Andres Pool, and not nearer to or within the limits of another designated San Andres pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.
- RULE 2. Each well completed or recompleted in the Chaveroo-San Andres Pool shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.
- RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.
- RULE 4. The first well drilled on every standard or non-standard unit in the Chaveroo-San Andres Pool west of the line between Range 33 E and Range 34 E shall be located in the NW/4 or the SE/4 of a governmental quarter section; and east of the line between Range 33 E and Range 34 E shall be located in the NE/4 or the SW/4 of a governmental quarter section. Each well shall be located within 200 feet of the center of a governmental quarter-quarter section.
- RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no

BEFORE THE
OIL CONSERVATION COMMISSION
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Cypel Exhibit No.

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nearer than 330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) in the Chaveroo-San Andres Pool shall be assigned an 80-acre proportional factor of 2.00 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable in the Chaveroo-San Andres Pool as the acreage in such non-standard unit bears to 80 acres.

NOTE TO RULE 4: This change in pattern-location description becomes necessary because of the short section along the west boundary of Range 34 E. The regular diagonal 80-acre spacing will be maintained.

### HEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico September 14, 1966

HEARING

REGULAR

IN THE MATTER OF:

325-1162

Inc.

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Application of Kern County Land Company for special pool rules, Roosevelt and Chaves Counties, New Mexico.

Case No. 3457

DEARNLEY-MEIER REPORTING SIERVICE, ALBUQUEROUS, N. ". PRIONE 213.0691 BEFORE:

Honorable Jack M. Campbell Mr. A. L. "Pete" Porter Mr. Guyton B. Hays

TRANSCRIPT OF HEARING

• BOX 10 SIMMS BLDG. . MR. PORTER: We will take up Case 3457.

MR. HATCH: Application of Kern County Land Company for special pool rules, Roosevelt and Chaves Counties, New Mexico.

MR. SPERLING: James E. Sperling of Albuquerque appearing on behalf of the applicant. I would like to request the indulgence of the Commission while the rather numerous exhibits are being marked and while they're being placed on the wall, if I may.

MR. PORTER: Yes, sir. Prior to that time I would like to call for other appearances in the case. Mr. Buell.

MR. BUELL: For Pan American Petroleum Corporation, Guy Buell.

MR. PORTER: Mr. Morris.

MR. MORRIS: I am Richard Morris of Seth, Montgomery Federici and Andrews, Santa Fe, New Mexico, appearing for Midwest Oil Corporation.

MR. GEDDIE: I am Ivan Geddie appearing for the Kerr-McGee Corporation. G-e-d-d-i-e, Geddie.

MR. JACOBS: Ronald J. Jacobs appearing for Skelly Oil Company.

MR. PORTER: Any further appearances? Mr. Geddie, nobody ever spelled your name like that in an oil group, do they?



MR. GEDDIE: No, sir, that's the reason I spelled it for you. They always want to know if I'm kin to John Paul.

MR. PORTER: Mr. Sperling, you are asking for a few moments while you post the exhibits?

MR. SPERLING: Yes, and have the exhibits which will be presented to the Commission marked by the reporter.

MR. PORTER: We will take a ten-minute recess.

(Whereupon, a recess was taken.)

MR. PORTER: The hearing will come to order. Mr. Sperling, before you proceed with your testimony we have a request for one more appearance.

MR. HOFFMAN: Yes, sir, Mr. Commissioner. Pete Hoffman on behalf of Champlin Petroleum Company.

MR. MEEK: Mr. Commissioner, Paul Meek appearing for Sun Oil Company.

MR. PORTER: Paul Meeks?

MR. MEEK: Meek.

MR, PORTER: Mr. Sperling.

MR. SPERLING: Mr. Commissioner, we have one witness, Mr. Burtchaell.

MR. PORTER: Would you have him take the stand at the end of the table, please?

(Witness sworn.)



# 5. • P.O. BOX 1092 • PHONE 243-6691 • ALINQUERQUE, NEW MEXICO DNAI BANK EAST • PHONE 256-1294 • AIBUGIJERQUE, NEW MEXICO

EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

#### EDWARD P. BURTCHAELL

called as a witness, having been first duly sworn, was examined and testified as follows:

#### DIRECT EXAMINATION

#### BY MR. SPERLING:

- Q Would you state your name and place of residence?
- A My name is Edward P. Burtchaell; manager, oil production, Kern County Land Company, San Francisco, California.
  - Q What is your position with Kern County Land Company?
  - A Manager, oil production, and engineering.
- Q In connection with the performance of your duties for Kern County Land Company have you had occasion to study the Chavaroo field as designated by the Oil Conservation Commission on behalf of your company?
  - A I have.
- Q And in the course of such study have you collected information and data relating to this reservoir?
  - A Yes.
- Q And this data and information which you have collected you intend to present here today in support of the application filed by Kern County Land Company?
  - A I do.
- Q Mr. Burtchaell, in order that we may proceed with a minimum of interruptions so far as I am concerned, and in order



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BOX 1

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that your testimony will have continuity, I would appreciate it if you would refer to the exhibit in the course of your testimony which, insofar as possible, will proceed without interruption from me and making reference to exhibits which have been marked by the reporter and will become a part of the official record of this Commission hearing, assuming the entry into evidence of the exhibits.

(Whereupon, Applicant's Exhibits 1, 2, 3, 4, 5, 6-A, B, C, D, E, F, G, H, 7 and 8 were marked for identification.)

- (By Mr. Sperling) First of all, I would like to ask Q if you have testified on previous occasions before this Commission.
  - I have. Α
- Then your qualifications as an engineer are a 0 matter of record before the Commission?
  - Yes, they are. Α
- Will you then proceed, Mr. Burtchaell, with your Q testimony?
- At the start, in view of the fact that some 230 Α wells have been completed in the Chaveroc-San Andres field and we are now requesting an 80-acre spacing allowance for future development wells, which request may seem to be understandably a little late in the life of this field, I believe it would be pertinent to very briefly review the chain



SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATE MENTS. EXPRIRT TESTIMONY, DAILY COPY, COI 1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO 1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO of events which occurred which led the Kern County Land Company to make its proposal for 80-acre spacing.

First of all, it's significant to realize that two wells were drilled in the field prior to discovery of the field.

Pan American drilled in 1962 their New Hope Unit 1 here in Section 23, and in 1963 Kern County Land Company drilled a well in Section 22. Both of these wells are deep test drilled to the Bough "C" sand, which were unproductive and were not considered worthy to complete in the San Andres. So these wells were abandoned. There's also a possibility that a well down here --

MR. PORTER: Would you refer to that by section, township and range?

A Section 9, Township 8, Range 32 East, Chaves

County, New Mexico. This well was completed, maybe about 100

barrels, and was plugged. I want to emphasize this, because later

on in our testimony we will show that the producing

characteristics of the San Andres at Chaveroo are such as to

cause us to file this 80-acre spacing requirement.

Again, I want to emphasize that two wells were drilled through the pay and were plugged. The field was actually discovered by the Champlin with their Hondo State No. 1 in 1965. This is some two years after the Kern County Land Company drilled and abandoned our New Hope Unit No. 1 in



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MEX CO Section 22. This well also was a deep test drilled to the Bough "C" sand to about 9100 feet and was plugged back and made a successful completion in the San Andres, which then led to the development of the Chaveroo field. I believe most people are familiar with the general geology and the characteristics of the San Andres zone, but just to highlight them, I would like to show on Exhibit 1 our interpretation of the regional structural characteristics of the field.

We have contoured here, and I hope you can see them, a

We have contoured here, and I hope you can see them, a marker which we call the pi marker which is a characteristic marker within the San Andres zone about 500 feet from the top. As you can see, the structure is a monocline, it dips to the south, and this is typical of so many San Andres fields. There's no particular high in the field, no structure, just a monocline that's generally going to dip.

In Exhibit 2 we have illustrated here what we call a type log of the San Andres pay in the field. We have shown here this pi marker which is a point of correlation across the top; then we have divided the so-called pay zone into three general zones which we call P-1, P-2 and P-3. These zones are generally separated by an anhydrite band in here and in here, (indicating). Wells in the field are completed usually throughout these, most of the wells are in P-2. There are some that have perforated the P-1, some have perforated the



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P-3, some have perforated all three. This log is of interest, and one of the key points we are trying to show is the very erratic and streaky nature of the pay intervals within the San Andres.

On this movable oil plot we have shown in the outline in red the total porosity of the zone. The yellow is what is called the interpretation of the movable oil. The blue is what is supposed to be the interpretation of the water porosity. The oil zone then apparently is in here and in here, (indicating), and you can see the streaked nature of the pay. We find this in every well we have completed, and I am sure it's true of every well in the field.

The pay is not a solid section of limestone saturated with oil. Instead, it's characterized by streaks of porosity in which the oil is found. We have confirmed this general appearance of the pay zone by the cores we have taken and the cores we have obtained from other operators. This is a plot of permeability, and then again you see the streaked permeability through this interval.

Over here we have plotted the porosity and again we get the same streaked porosity, bands of porosity through the pay zone. As far as the fluid content goes, I don't think it's determined yet just exactly whether this zone is always wet or always oil-producing. Some operators have completed in



here, they have made what appear to be oil wells. There's a possibility that communication can exist through this thin anhydrite zone behind the casing, and actually the oil is coming out here, but we can't prove that.

I believe in a general sense that this type of pay is somewhat characteristic of the San Andres you find throughout the Permian Basin that is a dolomite section that has so-called shingles of porosity. The shingles as you go updip can go from water to oil to gas and vary throughout the field. To illustrate the continuity of this apparent pay zone as we have designated P-1, P-2, and P-3, we present as Exhibit 3 a cross section which we have drawn from this area clear down into here so it dissects the field in a southwesterly direction.

MR. PORTER: In other words, drawn from the northeast to the southwest?

A That is correct. Again we have shown the so-called pi marker here, which is the point at which this Exhibit 1 is prepared on; we have shown our picks of these, P-1, P-2 and P-3 with the anhydrite zones being between. As you can see, in most of the wells it shows up very nicely on the log in here.

What we are attempting to show here is that in our opinion there is a general regional correlation across the field in the porous zones in which the pil is produced. The

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dark intervals in here in these particular wells are the intervals that this well is completed in. See, this Champlin well was completed in P-2. This one is in the P-2; these, you get wells that go up to P-1, P-3. Same situation here, same situation here.

Alongside these wells on our cross section, wherever available, we have also shown the available core data, and you again can see the streaked permeability and streaked porosity which we believe is characteristic of this field. We see it here, we see it over here again. The important thing we are trying to show with this exhibit, that you can correlate porosity zones across the field.

In Exhibit 4, which we have not placed on the board, we have a summary of our reservoir data that we have obtained in the field. As a matter of interest, the discovery well, the Champlin State Hondo No. 1 was completed March 20th, 1965.

It was completed on an initial potential of 148 barrels a day, swabbing after a 2500 gallon acid treatment. The monthly production as of July 1966 for the entire field was 7700 barrels per day, for a total of 239,000 barrels for the month. Water production is now averaging 27% for the entire field.

Remember now, the field was discovered in 1965, March, this data is as of July 1966, approximately one and a third years later. The produced gas, as near as we can determine,

and our figures are now tied into gas plant figures which have just commenced to be obtained in the field, the total gas production from July was 178,000 MCF, giving an average gas-oil ratio for the field of 750 cubic feet per barrel.

The cumulative production through July 1966 was 1,234,000 barrels of oil, 443,000 barrels of water, and approximately 951,000 MCF of gas. Again, as of September 1, 1966 there were 228 wells completed in the field and four to five rigs are now still drilling.

Based on an analysis of 23 wells, the average porosity for the total of Zones 1, 2 and 3 is 6.9%. The average permeability is 1.8 millidarcies. In our analysis we used a porosity cutoff of 4% and a permeability cutoff of .1 mds. The original reservoir pressure, which point we'll get into later on, we have determined to be 1415 pounds per square inch.

Now, based on two bottomhole oil samples which were obtained on our leases of Pan American, we have determined that the initial saturation pressure was at the initial bottomhole pressure or 1415 pounds. The initial formation volume factor was 1.22, and the initial solution gas-oil ratio was 430 cubic feet per barrel.

Let me emphasize that the initial solution ratio was 430, the July 1966 average produced ratio for the field was 750. The total production has been about a million and a quarter

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MMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO KST NATIONAL BANK EASY • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO barrels, so the solution ratio has now increased from 430 to 750 in about one and a third years of production. We think this is significant to demonstrate that depletion is occurring in the field at a rather rapid rate.

I might very briefly describe what we interpret the pay zone to be. Based on our visual analysis of the cores that we have obtained on our wells and cores we have seen on other operators' wells, we characterize the pay as vugular in streaks and honey-combed with minute fracture planes. We see the fractures in the cores.

Now the one very significant point we would like to make in regards to the San Andres zone in this field as compared to what I call a normal San Andres situation, is that the matrix porosity, the matrix area of the pay zone, the interval between fractures outside of vugs does not have any measurable porosity or permeability. In other words, the core data that we have analyzed indicate that the porosity outside of fractures and vugs is very, very low, and there is practically no permeability whatsoever. In our experience the normal San Andres type zone, some 80 to 85% of the total oil in place is contained in a matrix porosity. It's our opinion that in a normal San Andres field the oil is produced by bleeding from the matrix rock into fracture systems whereby it is produced at the well bore.



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In this case we have some evidence that this matrix area or volume is practically nothing. This leads to a supposition or a fear that the actual oil in place available for recovery will be low, because we do not have the bank of oil contained in the area surrounding the fracture system. In general, then, these conditions I have described were the conditions which existed in the field at the time the Kern County Land Company commenced our development operations in the field. Due to some internal problems we were obviously a late developer in the field.

Our operations commenced in May 1966, or one year and two months after the field had been discovered. We proceeded obviously to attempt to catch up as fast as we could. We had some 25 offset obligations that we had to meet, so we moved in one rig and two, then three, and proceeded drilling at a rather rapid rate. At the same time we started to collect what reservoir data we could.

Our initial drilling was confined to our inside leases, just to illustrate in here. We were rimmed by offsets and we started drilling in here and we jumped up in here and here, and so forth. As we moved out from this so-called inside location, as we moved out to the outer edges of the field, at that time we began to get evidence that pressure depletion was occurring in locations beyond a 40-acre spacing pattern.



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1120 SIAMS BIDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO |203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO we had scattered pressure data we obtained from other operators that had indicated that the pressure was declining in the field. We had evidence that gas-oil ratios in other operators' wells was increasing at an alarming rate. We had also rumors that many wells in the field were unable to produce their 40-acre allowable after only one year of production. So obviously this picture, then, indicated to us that perhaps the field did not contain the characteristics and would not have the recovery that we had originally anticipated at the time we started our drilling campaign.

In order to verify this we thought it necessary to run what pressure data we could to see whether or not we could verify that bottomhole pressures were declining at the rate we thought they were. To assist us in this problem, on August 15th, 1966 we submitted a letter to all the operators in the Chaveroo field requesting their support in our efforts to verify the reservoir conditions at Chaveroo. We requested reservoir information that they had and we informed them at that time that we were planning to file for temporary spacing rules for 80-acre spacing in the field. We sent this letter to 36 operators. We received nine replies, and out of the nine seven operators were good enough to send us what data they had.

So then we proceeded to study what data we could get



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our hands on to try and determine whether or not pressure depletion had occurred in recently drilled areas in the field. Now, to illustrate what we determined, I refer you to Exhibit 5. What we are showing here is a plot of reservoir pressures at +150 foot datum point plotted against cumulative oil production from the Chaveroo field. The red dots have the pressure points that we have determined to be the most reliable ones available to us at this time.

The first five points are extrapolated and calculated buildup pressures taken from drill stem tests. The remaining four are actually buildup pressures taken in shutin wells. Now, I think it's significant to show that the initial pressure No. 1 here, which we have determined to be 1415 pounds, was taken in the discovery well Hondo State No. 1 prior to its completion. Remember that this well was drilled as a deep test. As they went through the San Andres zones they were fortuitous enough to take three drill stem pressures. One of these we have determined to be quite reliable, and we extrapolated this pressure buildup to arrive at our pressure point of 1415 pounds. So this we have set in our opinion as initial pressure in the Chaveron field.

Point No. 2 was taken in the Champlin Lauck No. 1 Federal, taken in July of 1965, some four months after discovery. The field at that time had produced a total of



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16,000 barrels, which isn't very much.

Now, to illustrate the significant points in relationship to the development of the field we have Exhibit 6, which is labeled 6-A to 6-H. This orange area here is the area of the field that was developed at the time this point was taken.

You can see now that we had some three, six, eight wells had been completed in the field at the time that the pressure was taken in that well there. It's significant to show that this well is a stepout well. It's not within the developed area, it's an outside area, so we feel that if pressure depletion is occurring, that we would see it in a well like this.

The pressure we measured was 1400 pounds, indicating at that time some 15 pound drop in pressure. In August 1965, or a month later, Champlin No. 4 State 32 well produced 26,000 barrels. Again the field had progressed to this point, the pressure we measured was in that well there of 1348, it's a stepout well, but notice now that it's offset by three producers, so it has three drainage points on it and still on 40 acres there.

The next was Champlin No. 6 State 32, taken in September, a month later. The field had now produced 43,000 barrels of oil, the field had grown to this size. Again we had an edge well, again we had a well surrounded by two producers. The bottomhole pressure at that time was 1310 pounds, indicating approximately a 105 pound drop in reservoir



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pressure that occurred in a 40-acre location that had not previously been drilled.

We proceeded on and on November 21, 1965 some two months later, the field had produced 120,000 barrels of oil. We still had a drill stem pressure in this Champlin No. 1 State 5. Again notice that it's a stepout well offset by one producer and one diagonal producer. The pressure here was 1375, or still 25, 40 pounds below initial pressure.

In February of 1966 we obtained from Shell Oil Company a buildup pressure on their No. 1 State CV. The field at that time, now, had produced 320,000 barrels of oil. This well, again a stepout well, the pressure that we calculated from buildup was 1298 pounds or approximately 117 pounds drop from initial pressure.

In March of 1966, a month later, we obtained from Shell Oil Company a pressure on Shell No. 2 CV State well, which is a buildup. The field had produced 410,000 barrels of oil. We now notice one of our key points. We have a well with a maximum buildup which is 160 acre spaced from any nearest producer. These wells were taken on initial completion. We had a situation, we're 160 acres removed from production and yet the bottomhole pressure was below initial pressure.

Now we move to the Kern County Land Company activity, in August we ran a buildup pressure in our Federal 23 No. 8 well. .

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The field had now produced 1,300,000 barrels. It had developed to this particular size. The well in question is located in here, it's an infill location. The pressure that we recorded was 1267 pounds after buildup, again substantially below the initial pressure of 1450 pounds.

The final point here to illustrate this drop in pressure which has occurred is a well we deliberately drilled,

Federal 22 No. 2 well in a spot that we hadn't drilled before,
a spot 160 acres from the nearest production. There had been
no production essentially from this area. Now, we are in an
undrilled area 160 acres removed. We went ahead and took a
buildup. We had excellent results and calculated a pressure
of 1320 pounds. The field, we estimated, produced at that time
about a million and a half barrels, here again, some 95 pounds
below initial bottomhole pressure.

From this information we concluded that pressure depletion was obviously occurring over the 40-acre spacing rules in the field. To really verify this fact of pressure depletion occurring beyond 40 acres we then went back to our Federal 23 No. 8 well, located here; we flowed the well at fairly high rates for a week. We shut it in and we left it shut in up to now. It's still shut in.

We ran a buildup bottomhole pressure and we got this pattern. We got an idea of what is our extrapolation some 22



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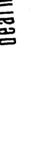
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days between that point and that point. The recorded pressure at that point was exactly the same as at that point, but then when we came here at September 8th and measured it again the pressure was now starting to decrease. Notice that the offset wells are on production during this whole period, so we felt that probably this thing, this history was coincidental, that we caught it as it came back down.

It does illustrate, and quite conclusively, that production from offset wells is more than capable of draining over 40 acres of spacing. This well will continue to be shut in, it will continue to decrease, and we fully anticipate that the pressure will continue to decrease.

- Mr. Burtchaell, for the record I think it should be pointed out that the last exhibit to which you were referring was Exhibit 7.
  - I'm sorry. That is correct.
  - Now, in connection with the letter which you have Α referred to as having been circulated among the operators in, I believe August of this year, did you at that time submit proposed special rules for the consideration of the operators and this Commission at the time the hearing on the application was to be held?
    - Yes, we did. Α
    - Do you have a copy of those proposed rules in Q





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exhibit form?

- Yes, I do. Α
- Marked Exhibit 8, I believe? Q
- Exhibit 8.

Would you please summarize, without reading, since they are a part of the exhibits, the provisions contained in the rules which are being proposed by your company?

All right. Before I summarize the rules I would like to emphasize at this time that the intent of these rules is to allow those operators who desire to do so the right to drill their future wells on an 80-acre spacing pattern with the appropriate allowable being assigned. Those operators who desire to continue to develop on a 40-acre pattern should have that right. We are not intending to restrict any operator in his drilling preference. We do believe, however, that if 80-acre spacing is adopted, that in order to minimize future exceptions to the rule that some pattern of development should be followed.

The Rule 1 is the standard statement of the spacing rule. Rule 2 sets forth an 80-acre unit, and we have specified that the 80-acre unit can be the North Half, the South Half, the East Half or the West Half of any governmental quarter section. In other words, you can put it where you want. We also have a sentence there "that nothing contained



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herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit."

Rule 3 just grants the standard rights to grant exceptions to the spacing rule. Rule 4 is the rule in which we establish the 80-acre spacing pattern as being the Northwest Quarter or Southeast Quarter of the quarter section. Now we have to make a small break here in that the area west of the 33 Township Range, what we are recommending is Northeast and the Southwest. This area here east of the range line has an odd section. There is a loss in one quarter section through here. In order to prevent inequities, then, we have switched our spacing and have said that the spacing will be the Northeast and the Southwest.

If that is followed you would come across the line, you would still have your diagonal pattern. That's the reason for the small change in 4.

In Rule 5 we have put in the standard exception to the footage requirements, and Rule 6 is the provision that an 80-acre spacing unit will be granted a proration factor of two.

Do these particular rules have any present precedent insofar as prior Commission action is concerned, Mr. Burtchaell? It's my understanding that almost identical rules, with the exception that you have just referred to, have been adopted by the Commission as applicable to the Flying M-San Andres Pocl.

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That is correct. I might just elaborate briefly. Λ The reason for the proposed pattern that we have picked, is we tried to minimize as many exceptions as possible in the field as highly developed as this, and we tried to conform what the future there might be to what little pattern there is in the past.

There are two wells drilled this way and two drilled here. There is some semblance of a pattern, though small, there is still some. We tried to fit in the pattern as best we could with what had happened in the past.

I take it from the testimony that you have presented and the rules which you have proposed, as well as the content of your application, that what you have said in essence is that this field should be developed on 80-acre spacing pattern where possible in order to prevent the unnecessary drilling of wells and in order to prevent economic waste, is that a fair statement?

That is correct. I believe, just to summarize, we believe we have proven to our satisfaction that reservoir drainage was occurring beyond the existing 40-acre well tracts. In view of the low order of porosity and permeability development in the field, the characteristics of the streaked pay with these in the pay section, the fact that many wells, in fact at the last count we had 28% of the wells now completed

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in the field are unable to produce a 40-acre allowable; to us that's indication of depletion. The increased gas-oil ratios are also indications of depletion.

It was our opinion that in order to minimize economic waste by the drilling of unnecessary wells that we would propose an 80-acre spacing rule.

- Do you have anything further to add, Mr. Burtchaell? Q Α No, sir.

MR. SPERLING: At this time I would like to offer Exhibits 1 through 8 in evidence.

MR. PORTER: Were these exhibits prepared by Mr. Burtchaell?

MR. SPERLING: Excuse me.

- (By Mr. Sperling) Were these exhibits prepared by Q you or under your supervision?
  - Under my supervision. Α

MR. PORTER: If there are no objections, the exhibits will be admitted in the record.

> (Whereupon, Applicant's Exhibits 1 through 8 were offered and admitted in evidence.)

MR. PORTER: Does anyone have a question of the witness?

MR. GEDDIE: I have one question, if I might.

MR. PORTER: Mr. Geddie.





# CROSS EXAMINATION

#### BY MR. GEDDIE:

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It is the intent of your rules that the operators can drill an additional well on an 80-acre spaced tract if at sometime in the future they feel it is feasible to drill a well at that time?

It is. At that time it would also go that he would get 40-acre allowable.

Now, we will have many units that have pattern, let's say non-standard locations, initially, what provision has been made for these 80-acre units?

I'm sorry, at the time we wrote our letter on August 15th we mentioned there that it was our intention that any well drilled and completed at the time the order is issued would be automatically granted an exception to the spacing rules.

MR. GEDDIE: I see. Thank you, sir.

MR. PORTER: Mr. Nutter.

# CROSS EXAMINATION

# BY MR. NUTTER:

Mr. Burtchaell, what type of a reservoir do we have here? What is the structure, or just what is the nature of this?

We believe it's a monocline with porosity streaks, Α



porosity pinchout or stratigraphic pinchout of porosity intervals with a monocline structure.

- We have a monocline and then the development of the pay occurs as you have development of porosity and permeability?
  - That is our opinion.
- I notice in studying this pool that there are numerous instances in which wells with extremely high potentials come in and are possibly offset by wells with low potentials. The difference between these potentials is of such magnitude that I don't believe we could call it pressure depletion or the depletion of the reserves in the neighborhood. To what would you attribute this wide variation in potential?
- Well, in one sense it's easy to explain. If you notice, to come back to this type log here, we have testified and believe that this pay, and let's talk about the P-2, is contained with thin streaks of porosity in which we have movable oil. Now, if you would perforate just opposite each of those thin streaks and you would concentrate your frack treatment or your acid treatment so that instead of being dissipated over that interval with four holes per foot, which many operators have done, if you put from 12 to 15 to 20 holes total but locate your holes opposite where you think the oil is, then I think you will get the wells.

Now, that is the program that the Kern County Land



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ALBUQUERQUE, NEW MEXICO PHONE 243-6691 BOX 10 Company is following. In practically every case we have come in with substantial higher initial productivities in our surrounding wells. That's the technique we use. We use a limited entry frack technique. We put from 12 to 20 holes depending on where we determine the movable oil to be in the pay zone.

MR. PORTER: You think this is the basic reason for the difference in potential is this method of completion?

That is our opinion. Now, obviously with the permeability pattern you have it's also true that wells will vary in the streaks of permeability and porosity they will have but we think that you can confine your treatment into what permeability you happen to have in your particular well, you will obtain a better well than if you just attempt to complete over the total interval haphazardly and let the frack treatment go where it may.

- (By Mr. Nutter) Do Kern County Land Company's Q wells all have the same potential?
  - All the same? Α
  - Q Yes.
- Numerically, no. They vary from 200 to 600 barrels a day.
- Would this be a matter that's the result of the method in which you completed those wells?



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BOX 1 P.O. BANK

Α We believe in general that our higher initial productivity are due to our completion technique, yes. There are many cases, I don't have them specifically, we can get them, we have offset very low productivity wells, the logs look the same and so forth, and we come in with a much higher well, our wells are all top-producing allowable without any effort. I know of one instance in the pool where a 30-Q

barrel is offset by a 40-hundred barrel potential, do you think a magnitude of this nature would be a result of a method of completion?

No, not exactly; but we do know that porosity and Α permeability streaks can vary drastically from well to well. We can correlate them, as we have attempted to do in a general sense, but in our study of other San Andres Pool, not only in New Mexico but Texas, to me it's common to have extreme variations in porosity and permeability. I can't explain it. It may be a combination of a very low order of porosity and permeability development in that well and the completion technique.

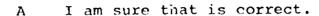
I notice in your direct examination you used phrases, "streaked nature of the pay," "bands of porosity," "shingles of porosity," "streaked porosity." You weren't limiting these variations in porosity and permeability to a vertical condition, that is also horizontal?



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If you have such variation in going from one 40-acre Q location to the next 40-acre location, is there an increased possibility of having more variation in going from an 80-acre location to the next 80-acre location?

I think so, yes.

Is there a possibility when you increase the potential by variation in spreading out the drilling pattern of possibly even missing some of these zones of porosity and permeability?

Well, it's possible. I think the evidence that refutes it, or at least is in our favor to date, is the fact that the pressure information we have furnished here indicates that pressure depletion is occurring over wide areas. If the porosity or permeability varies, as I testified, it is a matter of whether it disappears completely between two wells. It can go from two foot to ten feet and back to two. So long as there is a channel or method of communication between one point and another, however small it may be, oil will move.

It must be something of that nature, because I have shown when we went into this well here, which is over 160 acres away from its nearest producer, we got substantial evidences of pressure decline, which means that fluids must have been migrating across that field. We had attempted up



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BOX P.O. 8ANK here, we can't present this data at this time because we don't have it, but we drilled that well as a real stepout to get this information again. We have been unable to complete the well. It's still making about 20 to 30 barrels a day and we haven't got our load oil back after about three weeks, so we weren't able to bomb the well. We intended to.

This was a key well in the north, but as you can see from the pattern, we had the Shell well here that had drawdown, we have wells here with drawdown and wells over here with drawdown. They all show drawdown. We haven't found a case and this doesn't mean there can't be, but we haven't found a case of pressure data that didn't indicate drawdown over a 40-acre pattern.

The majority of these exhibits, the six series of exhibits, however, indicated drawdowns of wells which were offset by 40-acre rather than 160-acre or 80. Two of them were 160 and the other six were 40.

- 0 Which showed communication as far as 40 acres were concerned?
  - Α Correct.
- When you do have a reservoir of this nature with bands of porosity and shingles of porosity and variations in porosity and permeability, both vertically and horizontally, would you agree with me that the likelihood of the porosity



completely fading out increases with the distance in which the wells are drilled apart? In other words, the likelihood of fadeout of pay increases with the increased distance?

- A Well, I don't like to agree. I like to rather --
- Q It is a fact, however, though, isn't it, Mr. Burtchaell?

A I rather like to think of it as it disappears as we reach the limits of production of that particular zone, and we haven't seen any particular streaks that disappeared completely; you may be right, but we can correlate across the field and we can roughly correlate different streaks.

Now they come and go and they go up and down, and whether this one can be this one, it's anybody's opinion, but in general we seem to see that the porosity is comfined in the zones, it stays as porosity, but as we approach the edges, then it goes out. Now, whether it goes out between, say, this well and that well, we haven't seen it, certainly it could.

- Q Your cross sections don't show any offsetting wells, do they?
  - A Offsetting?
  - Q Yes, sir, direct offsets to each other.
- A The diagonal. It's this well here, that well, that well, no, there are no offsets.
  - Q No direct offsets?

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Λ No.

We can't look at a cross section and find that a Q pay of any given zone is continuous from one well to the next, this can't be shown by one of those exhibits?

Well, we think we can show that it extends beyond that offset. For instance, this porosity streak here. I mean it looks like it's that porosity streak. It looks like it's that porosity streak. It's fuzzy here, but here it is again. I can't say it is the same, but it certainly correlates roughly as being in the same interval, and perhaps it is the same, certainly you can see them.

You can correlate the red zone, the P-1 zone from one well to the next and clear across the pool and you can correlate P --

> Α Yes.

0 -- P-2 from one end of the pool to the other, and the P-3?

Α Yes.

But specific zones of porosity, I presume these little black areas are the interval of perforation?

That is correct. Here is a zone of porosity. it right there in this well? Now there is the same zone, there is an apparent zone which looks like it's the same, it's the same interval down. Now here it is here, or here is a zone of



1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • AIBUQUERQUE, NEW MEXICO 1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • AIBUQUERQUE, NEW MEXICO porosity which looks like you would correlate it today.

- Q It's not as thick in this third well?
- A No, it varies. Here it comes back in again. It's thicker here. It's thinner here, it's fairly thick here, and it looks pretty good here; here it is here. Now I am not going to say it is the same, but certainly it correlates the field the same.
- Q That's the main section of porosity that appears in that P-2 zone?
  - A Correct.
- Q You didn't mention any figure as far as estimated reserves under these tracts are concerned, Mr. Burtchaell.

  Do you have any idea of the reserves under a 40-acre tract?
  - A I have an opinion, yes, sir.
  - Q What is that estimate of reserves?
  - A About 65,000 barrels per well.
  - Q That's per 40-acre well?
- A Per 40 acres. It's an opinion. We have no evidence to substantiate it.
  - Q Is that based on your average porosity of 6.9%?
  - A That is correct.
- Q What thickness of pay were you assuming there to get 65,000 barrels?
  - A Well, actually we went to a recovery in terms of



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barrels per acre, some 1500, roughly, barrels per acre is what we are using in this field. But we had hoped, and one of the reasons for our request for temporary rules, is in the coming year to attempt to establish these factors. We have started a program of core analysis and thin section and that sort of information to analyze what we can get our hands on to verify whether or not the oil is primarily contained in these very thin streaks or whether there is oil throughout the interval that we may hope to get.

obviously as the field continues to produce we will have more leases and more wells that may go on decline. It may be that a decline curve analysis will give us some the. Right now with the problems they have had of running oil, you are a little reluctant to go to the well production and believe them wholeheartedly. We know there's problems in running the oil, so an indicated under production may not be real. But now that the pipeline is in and operating, in time the problem should improve.

 $\Omega$  Is the pool far enough along in its life that you would be able to determine what the drive mechanism is here?

A Well, it's certainly indicating it is, but with the cut now averaging 27% for the entire pool in just a year, you are in a quarter production, I wouldn't make the statement, though, that it is a water drive. We do see lots of water, but



BOX



again some of the problems we think are completion problems, the way the wells are completed, that there are zones, for instance, like we would interpret this to be wet, it is open, in a lot of wells they make water. Well, is that water drive or not? I would hesitate to say now.

- This water production does occur across the pool as a whole, most of it confined to the southwest corner of it?
  - Yes. That's where most of this activity is.
- Now, the GOR decline, and it would appear to be a Q solution gas?
  - It appears to be that way. Α
- What recovery were you assuming in figuring your 1500 barrels per acre?
- I didn't carry it that way. Just an experience factor in the San Andres that 1500 to 2,000, 3,000 barrels per acre is a good figure. With what we saw we wanted to go on the low side. We have just said in our own shop 1500 barrels with the idea that we will change it as the facts dictate. At this time we have not made a precise calculation of reserves.
  - Are you acquainted with the Vacuum-San Andres Pool?
  - Yes, sir.
- That's similar to this pool in this regard, is it not, that you have a water production, you have a water drive, but it's confined to one end of the pool?

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Q And the other end of the pool being the east end is probably a solution gas drive?

A Correct. I think it's understandable that the San Andres can do that to get back to the so-called shingles theory, there doesn't have to be exact relationship between all of this. We find in Slaughter we get intermediate water that have no relation to bottom water and things. I think it's the streaked nature of the San Andres. We are finding examples in this field of gas pays; not big yet, but there's certainly some evidence that some streaks up in here may have gas.

O Gas and no oil?

A No oil, very little oil. We have some wells that we have heard about that are very high ratio which we couldn't explain by depletion to that extent.

Q If this pool is similar enough to the Vaccum-San Andres in reservoir characteristics, and if we can anticipate future production characteristics, at least the central part and the east part may lend itself to secondary recovery at some later date?

A We certainly hope so.

Q If we have the bulk of the pool developed on apparently 40-acre spacing and go to secondary recovery at a



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later date the major part of the field is very well developed and would be highly adapted to an 80-acre five-spot waterflood Now, if future development should occur on 80-acre pattern. spacing, this would change the pattern as far as the waterflood program is concerned?

Correct, but I don't know if it would change it to the detrimental point. It's entirely possible, and, of course, information can be obtained to verify this and steps are being made to do just that, that an 80-acre pattern may not be any more detrimental than a 40 acre. There's no reason an 80-acre can't be flooded as well as a 40.

I know of some cases.

We are collecting core data and we are going to run relative permeabilities and so forth and hopefully from that information we may be able to determine coverage and floodability and so forth. We do not have the data now.

But a uniform 40-acre pattern would not be possible throughout the pool if a portion of it were developed on 40's and the remainder on 80's unless you went in and drilled infill water injection wells later on, isn't that true?

Yes, it would be true that it would not be possible. I think the key point is, is it necessary? I mean, in other words, if the field can be adequately flooded or efficiently flooded with 80's as well as 40's, well, what difference does



it make?

Q I see.

A To me it's a matter of what the reservoir dictates you have to do in order to obtain a maximum recovery. If it's 40, why then it's 40; if it turned out that 80 are satisfactory then 80-acre spacing is not detrimental to the flood. I imagine in some instances that the previous development on 80-acre spacing during the primary life of the pool dictates secondary patterns on 80 acres, whereas it might be more desirable to have a 40-acre pattern for waterflooding than the 80, but you have the 80 so you have to live with that.

Q That's correct.

A It's also conceivable that we wouldn't want any flood pattern. We might want to line flood. The spacing might be immaterial on this. Like Adair and some other pools may have a line flood. I don't think we are prepared to say at this time what form of secondary recovery will be required, if any. We don't know honestly.

Q Now, Mr. Burtchaell, under your rules that you proposed, I presume that if we take the hypothetical case where two men owned two leases and each lease is 80 acres, the man who drills one well on that 80-acre lease will get the same allowable and the same credit for his 80 acres that the man with the two wells on his 80-acre lease would get?





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That is our hope.

In other words, the man with one well is getting as much credit for an undeveloped tract as the man with the two wells gets for two developed tracts?

That is correct.

How many pools does Kern County Land Company operate Q in New Mexico, Mr. Burtchaell?

Let's see, the East Saunders, and here, are the only two in New Mexico. Is that correct? And El Mar; we operate that; three.

Well, in East Saunders, I believe the company asked for wider than the normal spacing pattern?

160-acre spacing, yes.

In Chaveroo they're asking for wider than the normal spacing pattern?

Yes.

Is this a characteristic of the operations of your company?

Yes.

That you are a wide spacing company essentially? Q

I would say we're trying to maximize profits. In Canada we drill on 320's and we testified there versus 160's. It's a question of how we can make the most money, and in this case we indicated low recovery and the depletion we see



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occurring, we think we can maximize profits by stopping unnecessary drilling of wells.

- Q But in two of the three pools that you are in in New Mexico, they're either wide spacing pools or proposed wide spacing pools?
  - A Yes, sir.

MR. NUTTER: Thank you.

# CROSS EXAMINATION

# BY MR. PORTER:

- Q Do you expect to recover as much oil from one well on an 80-acre unit as you would two wells?
  - A You got to answer that question?
  - Q Yes, sir, I would like to have your opinion.
  - A I'd say fieldwide, yes.
  - O Fieldwide?
  - A Yes, sir.
- Q That you would recover as much oil with half the wells that have been drilled, for instance?
  - A Yes, sir.
- Q We got 230. You think 115 wells would adequately drain the area that has been developed thus far?
  - A Yes, sir, as far as the field goes.
- Q Now, in other words, if you have one well on an 80 you wouldn't be disturbed if your neighbor drilled two wells



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on their 80?

- A Two wells on their 80?
- Q Yes.
- A No, sir.
- Q You'd take your chances with your one well?
- A Yes, sir.
- Q Now, you mentioned or indicated that 28% of the wells are now marginal in the pool?
  - A Under allowable, yes, sir.
- Q If the Commission should grant your application, the allowables as set for October would be 94 barrels instead of the present 46?
  - A Yes, sir.
- Q Do you consider the wells in here rate sensitive, would you cause waste by this increased allowable by pulling in water or by any other means?
- A No, I'm of the opinion that in a depletion drive which we tentatively think we have, the rate is immaterial to recoveries.
  - Q To ultimate recovery?
  - A Yes, sir.
- Q Even down in the southwest part where you do have considerable water production?
  - A Well, again, until it can be established that that



water production is due to a water drive and not due to a wet zone being opened in the well, I would have to say the same conclusion. I don't have the experience down there, but I would have to make that conclusion.

- Now, I believe that you do say that your company is giving some consideration at the time to secondary recovery, although you don't know what the mechanism might be?
  - No, sir.
  - 0 What method?

We are studying it along with Pan American, which are partners with us, and we are running what core data we can. We have obtained two bottomhole samples. We are getting the cores, the logs. We are doing what we can at this stage to try and find out.

MR. PORTER: Anyone else have a question of the witness? Mr. Morris.

### CROSS EXAMINATION

## BY MR. MORRIS:

Mr. Burtchaell, I think you stated that the intent of your proposed rules was to permit an operator that wished to continue to develop acreage on 40's to continue that development in that manner?

That is correct. We have no intention to restrict anybody from drilling how many wells he desired. All we're



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asking is that those operators that want the privilege of drilling on 80's be allowed to do so with the appropriate allowable assigned to the well.

Have you given any consideration, Mr. Burtcahell, to how your proposed rules would operate with respect to a non-standard 40-acre unit comprising either the Southwest Quarter or the Northeast Quarter of a quarter section?

I don't think it would be any problem. As I understand you, you mean if we changed our request from a northwest-southeast to a southwest-northeast?

No, sir. I'm assuming a situation where an Q operator wished to drill a well on a 40-acre non-standard unit.

- 40 acres only? Α
- 40 acres only. Q
- Well, 40 acres, he can drill, that's no problem, Α
- Well, I call your attention to your Rule 4. Q
- Yes, I know.
- Which says --
- It's been called before. Our intention in Rule 4 was when we talked units we meant 80-acre unit.
- Rule 4 also refers to non-standard units as well Q as standard units?
  - That's right. We were speaking of 75-acre or



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something. We did not intend to talk in this case of a 40-acre unit. The 40-acre unit, you have the right to drill now. don't have any intention of restricting that. We were trying to say here that for an 80-acre unit that you would then drill on this pattern, and again, I repeat, we think there should be a pattern. We don't think that an operator should be allowed to have his cake and eat it and drill anywhere he pleases.

MR. PORTER: I take it from what you say that you would have no objection if additional language were added to your Rule 4 to make it explicit, that in the case of a 40-acre non-standard unit, wherever that 40 acres might be located, that an operator could drill his well even if it were off pattern?

That is correct. We have no objection to any 40-acre spacing. We have no objection to any 80-acre spacing really.

(By Mr. Morris) Concerning the temporary rules that Q you have proposed, for how long do you propose that they be temporary?

- One year.
- Do you have any estimate, just from a study of the available locations and the apparently productive area of this field, how many additional wells might be drilled within the next year?

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Well, as you can see from the map, we have this dry hole here, now we have just gone back into the Pan American dry hole and have made a pretty good well. We have high hopes that we can do the same here. We are now moving out to drill here and drill here, so it looks like, and as far as we are concerned now in talking about this area, that Midwest and Kern County Land Company are in control of what the development is. We fully intend to proceed with one rig on an 80-acre pattern just steady, ten days, ten days, ten days, just keep going.

Obviously we get a dry hole it's going to change it. We see no reason why this field may not come in somewhere like this and we can have a good 15 to 20 wells located in this area. I can't speak for this area in through here. I'm not familiar with what the conditions are.

MR. PORTER: You think the field does have considerable development potential to the north?

I'd have to say that. We're getting disappointment here. We're getting gas and a 20-barrel a day well, but certainly through this area, and we know that new discoveries are made out here, as far as I am concerned it comes and goes and you have the situation like this, I am not too familiar with it, but obviously there's a pocket down here separated from here, but as long as we keep drilling you have a chance,

SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO that's what we say in the oil business. Once you stop you never know. We fully intend to keep going until we get shot down. It's our intention to go up the line in 80-acre pattern if we are allowed to do so, and I assume that Midwest would do the same. I don't know if that answers your question.

Q (By Mr. Morris) Maybe my question had a little different slant to it, Mr. Burtchaell. What I'm getting at, with the available locations, and you say your company intends to proceed drilling these wells at a reasonably constant rate in here, we are going to see a substantial number of wells drilled during the next year, and during the time that you propose that these rules remain in a temporary status. In view of the extensive development that the field has already seen and what it may see in the foreseeable future, would you not agree with me that it might be a good idea to take another look at these rules as soon as six months from now?

A Well, I don't see where it is material. Obviously you can always infill drill. You can never go higher once you have gone as close. Whether it is six months or a year, if we can be allowed to drill on 80-acre spacing I don't see where it's material whether we come back in six months or come back in a year. The idea is we want to be able to come back, or did I miss the point again? Certainly if we drill on 80's we can infill drill if that's deemed necessary, but if we drill



on 40's we can't erase the well once we spend the money.

- I assume, Mr. Burtchaell, the reason you are asking for temporary rules rather than permanent rules at this time is to have the opportunity to come back to this Commission and see whether the pool can be economically and efficiently drained on 80-acre spacing?
  - That is correct.
  - And if the field will be substantially developed within the next year, then your request for temporary rules is really a request for permanent rules at this time, is it not?
  - Well, if I make the assumption that it will be developed in the year, yes. I don't know where it's going to quit. If I understand you. What's the point of six months, or do you have a reason for wanting six months over a year that I have missed the point?
    - My point is this, Mr. Burtchaell, if the proposed rules for any reason are not going to work or going to cause hardship to any operator or are going to impede development, let's say, because of the fixed location requirements, we'll be able to see that six months from now, will we not?
      - Yes, but I don't see where the hardship, as we're proposing them, any operator has the right to drill anywhere he pleases. Now if somebody wants to think that these should



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be developed on 40's, why he can take out after it.

Q Let me make myself clear with

Q Let me make myself clear, Midwest Oil Corporation is supporting your request for 80-acre spacing.

MR. PORTER: It's always of interest to the witness that he does have support.

Q We did have some concern, however, as to how your rules would operate. I think you have clarified the situation with respect to 40-acre drilling. However, on the edge of the pool, or as you approach the edge of the pool, we can conceive of some restriction that would be caused by your fixed location requirements of your rules, and should it appear that that is being an undue restriction, we would like, it might be comforting to us to know that your rules would be coming up for reconsideration six months from now rather than one year. That's my point.

A We have no objection to six months. It's nicer in Santa Fe.

MR. PORTER: I'll relay that message to the Chamber of Commerce.

MR. MORRIS: That's all I have.

MR. PORTER: At this point I would like to ask if anyone else desires to present testimony or will present testimony in this case. Mr. Geddie.



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## CROSS EXAMINATION

## BY MR. GEDDIE:

- Q Your Rule No. 6 limits a standard unit to a unit containing between 79 to 81 acres?
  - A Yes.
- Q If you will refer to your map up here, you'll notice that along the western tier of sections in Township 7 South and 8 South, 34 East, that all of them have a short quarter section there.
  - A Yes, sir.
- Q And that they all contain around 90 acres, or 90 something acres, I believe, if I remember correctly, so it appears that some exception should be made for those, or some allowance should be made for those units along the western tier of that township.
- A Well, we had flipped our patterns, you know, to try to compensate. You are correct in the size.
- Q They would, according to your rules, they would all be non-standard tracts and they should be set up as 90-acre units?
- A Because we have to file for exception to that situation.
- Q I think they should be set up as standard because they can't be formed any other way.



A I see.

Q Under Rule 5 you state that exceptions will be granted administratively for topographical conditions. I wonder if we can leave out the topographic and permit the Commission to grant exceptions by the administrative procedure for any condition. If you have an administrative procedure set out there where you have to notify the offsetting operators.

A Yes.

Q I don't know why you would want to limit that to topographic if the offset operators are in agreement with the non-standard location, I don't know why it should be limited to your topographic conditions.

MR. PORTER: Commissioner Hays would like you to repeat your question.

MR. GEDDIE: All right.

Q (By Mr. Geddie) In Rule 5, the rule limits administrative location exceptions or administrative non-standard location, I guess is the way you would phrase it, to topographical conditions. I don't see why it should be limited to topographical conditions, why it couldn't be extended to location exceptions or non-standard locations for any condition as long as the procedure set out in the order is followed.

A It's all right with us. I guess you are aware



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that this area out here is a prairie chicken refuge.

- Q What is that again?
- A This is a prairie chicken refuge. We're all paying for the support of prairie chickens, maybe the topography has something to do with that. These rules were copied from another field. I don't think we intend to hang fast to the exact language.
  - Q It might save some unnecessary Commission work?
  - A Yes.

MR. PORTER: Mr. Glendenning.

## CROSS EXAMINATION

## BY MR. GLENDENNING:

- Q I want to be sure I understand correctly, the reference to standard and non-standard refers only to proposed 80-acre tracts. If you want to drill an offset well on a 40-acre tract that would be a standard tract insofar as 40 acres are concerned?
  - A Correct. That's our intention.

MR. PORTER: Any further questions of the witness?

If there are no further questions of the witness, he may be excused.

(Witness excused.)

MR. PORTER: If no one else has testimony to present at this time we will entertain any statements or comments



S BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO that you may have. Mr. Buell.

MR. BUELL: May it please the Commission, Pan American has made an independent study of this reservoir separate and apart from that conducted by the applicant, Kern County Land Company. The results of our study were the same as their study. One well in this reservoir will effectively and efficiently drain in excess of 80 acres. Of course, it's easy to say that it's too late now to adopt rules for this pool. My answer to that is that it is never too late to adopt the proper rules for a pool, particularly when adopting the proper rules in no way can harm or violate the correlative rights of any owner of interest.

We were critically interested in that question because we have some properties developed down to a density of one well for 40 acres. We looked into that intensively and we can see in no way how any owner of interest in this pool can be damaged by the adoption of these rules, and Pan American supports the adoption of these pool rules.

MR. PORTER: Anyone else have a statement they would like to make? Mr. Geddie.

MR. GEDDIE: Kerr-McGee Corporation supports Kern County Land Company in their application for spacing in the Chaveroo-San Andres Pool; Roosevelt and Chaves Counties, New Mexico. It is respectfully requested that the following be



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considered for inclusion in an order establishing spacing and rules for this field: First, a provision granting an exception to all wells with unorthodox locations which are completed or drilling on the effective date of the field rules order, and secondly, a minor rewording of Rule 5 to permit administrative procedure to be used for all unorthodox locations, whether for topographic reasons or other reasons.

MR. BAKER: I am Bob Baker with the Atlantic Richfield Richfield Company. Gentlemen, as you know, Atlantic Richfield Company has long been an advocate of wide spacing and as such, in this case, supports Kern County Land Company in their application for 80-acre spacing and 80-acre proration units and allowables.

Unfortunately, the Chaveroo-San Andres Pool has been developed to this point on 40-acre spacing and as such, Atlantic Richfield Company feels that operators will be deprived of their rights if they are not allowed to drill future wells in any order on an 80-acre tract. Fixed well locations for the first well on a standard 30-acre proration unit as proposed will prevent this. We recommend that the first sentence of Rule 4 be deleted entirely and have substituted a sentence that reads "A well drilled on a standard unit in the Chaveroo-San Andres Pool may be located on either end of the unit.



Atlantic Richfield Company also feels that the proposal to allow either of two wells on an 80-acre proration unit to produce the allowable in any proportion is a dangerous precedent to set. This can create unnecessary, perhaps uneconomical, drilling to prevent drainage. We recommend that the first paragraph of Rule 6 be changed to read "A standard proration unit (79 through 81 acres) in the Chaveroo-San Andres Pool shall be assigned an 80-acre proportional factor of 2.00 for allowable purposes. In the event there is more than one well on an 80-acre proration unit, each well will be assigned a proportional factor of 1.00 for allowable purposes and produced as though it is a well on a single 40-acre non-statement?

MR. PORTER: Anyone else want to make a statement? Did you have a statement to make?

MR. MORRIS: Mr. Porter, I think we have already made our position known.

MR. PORTER: Mr. Sperling, do you have anything further?

MR. SPERLING: No, we haven't.

MR. PORTER: Mr. Hatch, I believe you have some communications.

MR. HATCH: Communications from Tenneco, Sunray DX, Adam K. Graph, Associates, and Heron Oil Company. All of these



1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO 1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO have been in support of the applicant with the exception

Adam K. Graph supports the 80-acre spacing but would ask for an allowable of 1.25 factor for proration rather than 2.00.

Do you want these letters to be read?

MR. PORTER: No, they will be put into the record and included in the case file, Mr. Hatch. You have stated that they are in support of the application with the exception of the difference in recommendations of the effect on the part of one operator?

MR. SPERLING: Mr. Porter, we do have one concurrence which was addressed to Kern County rather than to the Commission which we would like to have as a part of the record.

MR. PORTER: Would you indicate who that is?

MR. SPERLING: Tom Brown Drilling Company. It's addressed to Mr. E. P. Burtchaell, Kern County Land Company,

San Francisco. "As a working interest owner we are in favor of the proposal to go to 80-acre spacing in Chaveroo. Signed Tom Brown Drilling Company."

MR. PORTER: If nothing further in the case we will take it under advisement.



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STATE OF NEW MEXICO )

SS
COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 19th day of September, 1966

NOTARY PUBLIC /

My Commission Expires:
June 19, 1967.

