

CASE 3535: Appli. of PENNZOIL CO.  
for creation of a new pool and  
for special pool rules.

CASE NO.  
3535

Application,  
TRANSCRIPTS,  
SMALL Exhibits  
ETC.

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

State of New Mexico  
**Oil Conservation Commission**



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

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

P. O. BOX 2066  
SANTA FE

March 13, 1968

Mr. James Durrett  
Rhodes, McCallister & Durrett  
500 Pan American Freeway - NE  
Albuquerque, New Mexico

Re: Case No. 3535  
Order No. R-3206-A  
Applicant:  
Pennzoil Company

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

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC       

Aztec OCC       

Other \_\_\_\_\_

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. 3535  
Order No. R-3206-A

APPLICATION OF PENNZOIL COMPANY  
FOR SPECIAL POOL RULES, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 6, 1968,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 13th day of March, 1968, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, 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 by Order No. R-3206, dated March 17, 1967, tem-  
porary Special Rules and Regulations were promulgated for the  
North Vacuum-Lower Wolfcamp Pool, Lea County, New Mexico.

(3) That pursuant to the provisions of Order No. R-3206,  
this case was reopened to allow the operators in the subject pool  
to appear and show cause why the North Vacuum-Lower Wolfcamp Pool  
should not be developed on 40-acre spacing units.

(4) That the evidence establishes that one well in the  
North Vacuum-Lower Wolfcamp Pool can efficiently and economically  
drain and develop 80 acres.

-2-

CASE No. 3535

Order No. R-3206--A

(5) That the Special Rules and Regulations promulgated by Order No. R-3206 have allowed and will afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil in the pool.

(6) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Special Rules and Regulations promulgated by Order No. R-3206 should be continued in full force and effect until further order of the Commission.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations governing the North Vacuum-Lower Wolfcamp Pool, promulgated by Order No. R-3206, are hereby continued in full force and effect until further order of the Commission.

(2) 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

  
DAVID F. CARCO, Chairman

GUYTON B. HAYS, Member

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

enc/

Case 3535  
Recd 3-7-68  
Recd 3-7-68.

Grant Pennzoil a permanent  
order for the M. Vacuum - U.S.C.  
oil Port. Order # R-3206

Evidence shows wells are  
capable of discharging at least 80  
Ac.

Thrust. W.

## Mobil Oil Corporation

P.O. BOX 633  
MIDLAND, TEXAS 79701

March 1, 1968

New Mexico Oil Conservation Commission - 3  
State Land Office Building  
Santa Fe, New Mexico 87501

Attention: Mr. Elvis A. Utz

CASE NO. 3535 - REOPENED  
MARCH 6, 1968  
NORTH VACUUM-LOWER WOLFCAMP FIELD  
LEA COUNTY, NEW MEXICO

Gentlemen:

Mobil Oil Corporation participated in a North Vacuum-Lower Wolfcamp pressure survey coordinated by Pennzoil. Mobil further received Pennzoil's testimony for the subject hearing and supports the recommendations contained therein. For these reasons, Mobil urges the Commission to adopt Pennzoil's recommendations on the subject field.

Yours very truly,



C. F. Underriner, Jr.  
Division Engineer

FLH/nab

cc: Mr. B. Sinclair - Pennzoil

53 MAR 4 1968

# Gulf Oil Corporation

EXPLORATION AND PRODUCTION DEPARTMENT—U. S. OPERATIONS  
ROSWELL DISTRICT

T. W. Kidd  
DISTRICT MANAGER  
M. I. Taylor  
DISTRICT PRODUCTION  
MANAGER  
F. O. Mortlock  
DISTRICT EXPLORATION  
MANAGER  
H. A. Rankin  
DISTRICT SERVICES MANAGER

P. O. Drawer 1938  
Roswell, New Mexico 88201

February 27, 1968

*JMA*

Oil Conservation Commission  
State of New Mexico  
Post Office Box 2088  
Santa Fe, New Mexico 87501

MAILED  
FEB 29 AM 9 35

Attention: Mr. A. L. Porter, Jr.

Re: Case 3535 (Reopened)  
Examiner Hearing March 6, 1968

Gentlemen:

Gulf Oil Corporation, as an operator in the North Vacuum-Lower Wolfcamp Pool, Lea County, New Mexico, recommends that the temporary 80-acre spacing rules for this Pool be continued on a permanent basis. We firmly believe that the drilling of wells on less than 80-acre spacing would not be economical and would cause economic waste by requiring unnecessary wells.

Yours very truly,

*M. I. Taylor*  
M. I. Taylor

JHH:sz

cc: Pennzoil Company  
1007 Midland Savings Building  
Midland, Texas 79701  
Attention: Mr. Benny Sinclair





Docket No. 7-68

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 6, 1968

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

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3535: (Reopened)

In the matter of Case No. 3535 being reopened pursuant to the provisions of Order No. R-3206, which order established 80-acre spacing units for the North vacuum-Lower Wolfcamp Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 3734:

Application of Getty Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Bowers-Seven Rivers Pool and the Hobbs Grayburg-San Andres Pool in the wellbore of its State "B" Well No. 1 located in Unit H of Section 14, Township 18 South, Range 37 East, Lea County, New Mexico, with the provision that no more than one single allowable will be produced from said well.

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

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

P. O. BOX 2088  
SANTA FE

March 17, 1967

Mr. James Durrett  
Rhodes, McCallister & Durrett  
Attorneys at Law  
619 Simms Building  
Albuquerque, New Mexico

Re: Case No. 3535  
Order No. R-3206  
Applicant: PENNZOIL COMPANY

DOCKET MAILED

Date 2-23-68

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.*  
A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC X

Artesia OCC       

Aztec OCC       

Other \_\_\_\_\_

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

Application of

PENNZOIL COMPANY

for Creation of a New Pool and  
Promulgation of Special Pool Rules

Case No. 3535

A P P L I C A T I O N

COMES NOW the applicant, Pennzoil Company, by  
and through its attorneys, Rhodes, McCallister & Durrett, and  
respectfully states:

I.

The applicant is the owner and operator of the  
Gallagher State Well No. 1 located 660 feet from the North line  
and 660 feet from the East line of Section 3, Township 17 South,  
Range 34 East, NMPM, Lea County, New Mexico.

II.

The subject well is completed in the Lower Wolfcamp  
Formation with the top of the perforations at approximately 10,689  
feet.

III.

The subject well has discovered a new separate  
common source of supply which should be designated a Lower  
Wolfcamp Oil Pool.

IV.

The subject well is presently the only well completed in the subject pool.

V.

One well in the subject pool can efficiently and economically drain and develop 80 acres.

VI.

Well locations within 150 feet of the center of a governmental quarter quarter section will prevent waste and protect correlative rights in the subject pool.

VII.

The promulgation of special rules and regulations governing the subject pool establishing 80 acres spacing and proration units and well locations within 150 feet of the center of a governmental quarter quarter section will prevent waste and protect correlative rights.

WHEREFORE, the applicant requests the Commission to enter its order creating a new oil pool for Lower Wolfcamp production and promulgating special rules and regulations governing said pool establishing therein 80 acres spacing and proration units and well locations within 150 feet of the center of a governmental quarter quarter section.

Rhodes, McCallister & Durrett

By J. M. Durrett, Jr.  
J. M. Durrett, Jr.

**SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS**

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EXAMINER HEARING

IN THE MATTER OF:

Application of Pennzoil Company for  
the creation of a new pool and for  
special pool rules, Lea County, New  
Mexico.

) Case No. 3535

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3535.

MR. HATCH: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico.

(Whereupon, Applicant's Exhibits A through G marked for identification.)

MR. DURRETT: If the Examiner please, J. M. Durrett of the firm of Rhodes, McCallister and Durrett, appearing on behalf of the Applicant. I will have one witness, Mr. Brown, who I would like to request that he be sworn in at this time.

(Witness sworn.)

CHARLES A. BROWN, called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DURRETT:

Q Mr. Brown, will you please state your name and position?

A I am Charles A. Brown, my position is Production Manager for Pennzoil Company in Midland, Texas.

Q Have you previously testified as a witness before the Oil Conservation Commission?

A I have not.

Q Would you please briefly give us your educational

background and experience?

A I am a graduate of Texas A and M University, with a degree in Petroleum Engineering, graduated in 1941. I have been employed, starting in about 1947, four years with Gulf Oil Corporation as a Petroleum Engineer, approximately four years with a service company as a Petroleum Engineer, and then approximately eleven years with Pennzoil and its related companies as an Engineer and Supervisor.

MR. DURRETT: Are the witness' qualifications acceptable?

MR. NUTTER: They are.

Q (By Mr. Durrett) Mr. Brown, what is Pennzoil seeking in this application?

A Pennzoil is seeking the creation of a new field or new pool for its Gallagher State Number 1 and the promulgation of special field rules including 80-acre spacing.

Q What are you requesting for well locations?

A We are requesting well locations in the 150 feet from the center quarter quarter Governmental Units.

Q Do you have a plat of this area, which I believe has been marked as Exhibit A?

A I do.

Q Will you please refer to the plat which has been marked Exhibit A and state to the Examiner what that shows?

A It shows first of all, the location of our Gallagher State Number 1 and other wells in the general area, showing the respective depths from which those wells produced, namely, from the lower Wolfcamp, Grayburg, San Andres, Queen, and Morrow.

Q What is the specific footage location of your Gallagher State Well Number 1?

A It is located 660 from the north line and 660 from the east line of Section 3, 17, 34.

Q And does this Exhibit A also show the basic leases in the area?

A To the best of my knowledge, it does show the basic leases.

Q Will you please move to Exhibit B? Please state to the Examiner what this exhibit is.

A This is an application for discovery allowable and the creation of a new pool form, C- 109 which shows well information.

Q Does this Exhibit B have the basic data concerning the date of completion and perforations and total depth?

A Yes, it does. The well was completed on January the 13th, 1967. It's perforated over the interval from 10,689 to 10,699.

Q What's the total depth?



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A The well was drilled to a total depth of 10,997 feet and has a plug-back T.D. of 10,931.

Q Does this also show the producing formation?

A The producing formation is lower Wolfcamp.

Q Is there any other information on there that you would think would be particularly pertinent you would like to call the Examiner's attention to?

A No, sir, there is not.

Q Let's move to Exhibit C, if you would. What is Exhibit C, Mr. Brown?

A Exhibit C is what we refer to as a series of stabilization tests. It is a series of tests which were run on the well and various choke settings to observe the response of the well to those various chokes.

The thing of real significance to me is the fact that the tubing pressure throughout this series of tests was relatively unchanged, which to my mind, is indicative of a well having good productivity.

Q And your gas-oil ratios are fairly stable, too?

A The gas-oil ratios are fairly stable in the area of 1600 to one.

Q Let's move to Exhibit D; is this a bottom hole pressure data?

A Right.

Q What does that show, Mr. Brown?

A This shows such bottom hole pressure data as we currently have on the well. The first one there is an initial shut-in pressure obtained on drill stem test and extrapolated to a maximum of 4144 pounds. Since the well was completed, we have obtained two additional pressures, one on January 19th of 4,076 and another one in February of 3944 pounds.

Q What do these bottom hole pressures indicate to you, anything in particular?

A In themselves, they may not indicate too much, except when viewed in the light of the production that has taken place between each successive pressure. When the one on January 19th was taken, the well had produced, if my memory serves me correctly, six or 700 barrels only. Whereas, the one taken on February the 21st was taken at a time that the well had produced something like 8,000 barrels. I think that covers that point.

Q Let's move to your pressure buildup test, now. I believe that's marked Exhibit E.

A Actually, the last test shown on the previous exhibit is presented in tabular form on this exhibit. It is a pressure buildup which we ran on the well at the time that the test began. The well had been flowing at a stabilized rate for approximately four days. We ran a bomb in the well and then

closed the well in and from that, developed a buildup on the well.

Q You have a buildup curve attached to it?

A There is a curve attached here, showing it, plus the tabular data, shows that the well actually built up and stabilized in a matter of approximately seven hours, which I think, means that the well again has a relatively good permeability, a fairly high productivity.

Q Anything else pertinent about that exhibit?

A I believe not.

Q Let's move then to your log which is Exhibit F, I believe. Will you please refer to Exhibit F and state to the Examiner what that is and what it shows?

A This is a log which is headed "Perforating Depth Control Log", actually it is a gamma-ray neutron log on a portion of the well. We have indicated at a point just below 10,500 where the top of the lower Wolfcamp occurs. The point at which the well was perforated is shown just above 10,700.

Q What does this log indicate to you?

A This log, in conjunction with drilling time, which is not plotted on it, indicates that we have a porosity depth in the area of the perforations totaling approximately 30 feet. From log calculations over that 30 foot interval, we

have an average of ten to eleven per cent porosity, water saturations are in the area of 25 per cent.

Q Anything else pertinent concerning that exhibit?

A No.

Q Let's move to Exhibit G, which is the cross section. Now, Mr. Brown, please refer to Exhibit G and state to the Examiner what that is.

A This is a cross section made up from logs of key wells in the area, including the Pennzoil Gallagher State Number 1. To the left of the cross section is a plat which we feel depicts the structural position of our well in respect to other wells in the area. We feel that the cross section is significant in that it shows that something definitely is happening geologically in this area.

Moving in an eastwardly direction from the left-hand well on the cross section, we're dipping down toward the east to a dry hole and then from our Gallagher State, we also have dipped northward to this same dry hole.

Q Do you feel that this shows that you are in a separate pool with your Gallagher State Well?

A Subsurface information which we have from three wells that we have drilled ourselves in the area, plus other subsurface information, plus some seismic information that we have, indicates to us that our well is related to a structure

separate from that of the Kemnitz Field, which is to the northwest.

Q And have you encountered different pressures?

A I am familiar in a general way with the pressures in the Kemnitz. It is my understanding that our initial shut-in pressure, as shown on one of our previous exhibits, is some 200 pounds higher than that on the Kemnitz, which I feel is significant. The Kemnitz Field is a relatively old field.

MR. NUTTER: Do you mean 200 pounds higher than the Kemnitz is now, or its original pressure?

A Than it was originally. The Kemnitz is a relatively old field and has been producing for a number of years. I understand that the present bottom hole pressure in this field is in the range of a thousand pounds.

Q (By Mr. Durrett) What is your bottom hole pressure now?

A The last one that we have was 3844.

Q Do you have anything further concerning this exhibit that you would like to call to the Examiner's attention?

A I do not.

Q Mr. Brown, is it your opinion as a Petroleum Engineer that your Gallagher State Well Number 1 has encountered a separate common source of supply?

A It is.

Q And do you base this opinion upon the data that you have presented to the Examiner here today?

A I do.

Q Have you suggested a name for the pool?

A We have suggested the name North Vacuum-Lower Wolfcamp

Q Is it also your opinion as a Petroleum Engineer, that one well in this pool can efficiently and economically drain 80 acres?

A Insofar as the limited data that we have can be used, I do feel that one well is capable of draining at least 80 acres.

Q Would you feel that this pool should be developed at least temporarily on 80 acres?

A I do.

Q Why would you feel that?

A I think that it would eliminate the drilling of unnecessary wells, I think that certainly it would, in a sense, protect correlative rights in the area.

Q Now, you have requested well locations within 150 feet of the center of a Governmental quarter quarter section?

A Correct.

Q Would you please state to the Examiner why you have not requested more rigid spacing?

A We feel at this point that a certain flexibility is

necessary for orderly development of the field.

Q Do you feel that the well locations that you have suggested will adequately protect correlative rights in this area?

A I do.

Q And is it your opinion that approval of your application will, in general, protect correlative rights and prevent waste?

A I do.

MR. DURRETT: If the Examiner please, I would like at this time, to move the introduction of Exhibits A through G and that will conclude my examination of Mr. Brown.

MR. NUTTER: Applicant's Exhibits A through G will be admitted in evidence.

(Whereupon, Applicant's Exhibits A through G offered and admitted in evidence.)

MR. NUTTER: Are there any questions of Mr. Brown?

CROSS EXAMINATION

BY MR. NUTTER:

Q There's a Wolfcamp Pool south of this discovery here. How far away is that pool?

A I am sorry that I can't give you that in miles. It is several miles south. I would be inclined to say some three or four miles, possibly further.

Q The Kemnitz-Wolfcamp Pool is the nearest Wolfcamp Pool?

A Yes.

Q Do you know if the Kemnitz Pool is producing from the same interval of this Wolfcamp?

A It is producing from the same general interval. It is the feeling of our geologist that it is not the exact interval but it falls within the same geological interval.

Q How about the Wolfcamp Pool to the south?

A I am not familiar with that field to the extent that I can compare it with this.

Q I believe we have an application from your company for the bonus discovery allowable for this well?

A Yes.

Q This will come up on the Regular Hearing next month. A good part of this testimony probably relates to that case as well as to this one. However, we seem to have a lack of information on this particular case, regarding the 80-acre spacing. Do you have anything to base your request for 80-acre spacing on, other than the fact that the well stabilized in nine hours?

A Well, I feel that that fact in itself is quite significant. It is indicative of good permeability, which is required of a well in order to drain an area of any magnitude.



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We have been able to take some of the information and actually calculate from that a pi, as I recall, 2.68, certainly that is close to it.

Q On your Exhibit Number C, you show the stabilization tests, the last test taken was February 6, 1967 and the well made 374 barrels on a 14-64 inch choke in 24 hours. Has the productivity of this well in any way declined? This is a month later, since that test was taken.

A It has not. We are able to flow the well, as a matter of fact, we have not had it on a 14-64's since this time. We are flowing it on 12-64 and we are making approximately 65 barrels a day.

Q A 14-64 would make more than its allowable?

A Yes, sir.

Q So, on the 12-64 it's holding up approximately at the same rate of production?

A Yes, it is.

Q What does this well cost, Mr. Brown?

A Approximately 185,000.

Q Has your company made any estimate of reserves here as yet?

A We have not.

Q What do you anticipate the drive mechanism for this reservoir will be?

A We feel it's a solution gas drive.

Q Is that the same drive you have up in the Kemnitz?

A Yes, that is what they have there.

Q Kemnitz is developed on 40 acres, is it not?

A I believe it's on 80 acres.

Q Is it on 80 acres?

A Yes, sir.

MR. NUTTER: Are there any other questions of Mr. Brown? He may be excused.

(Witness excused.)

MR. NUTTER: Do you have anything further, Mr. Durrett?

MR. DURRETT: That's all I have, Mr. Examiner.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3535? The case will be taken under advisement. We will take a ten minute recess.

(Whereupon, a ten minute recess was taken.)

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I N D E X

WITNESS	PAGE
CHARLES A. BROWN	
Direct Examination by Mr. Durrett	2
Cross Examination by Mr. Nutter	10

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED AND ADMITTED
Appl. Ex's. A through G	2	10

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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 9th day of March, 1967.

*Ada Dearnley*  
NOTARY PUBLIC

My Commission Expires:

June 19, 1967

I hereby certify that the foregoing is a true and correct record of the proceedings of the hearing of Case No. 3535  
on March 3/8, 1967.  
*Ada Dearnley*, Notary Public  
New Mexico Oil Conservation Commission

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. 3535  
Order No. R-3206

APPLICATION OF PENNZOIL COMPANY  
FOR SPECIAL POOL RULES, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 8, 1967,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 17th day of March, 1967, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, 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 by Order No. R-3205, effective April 1, 1967, the  
Commission created the North Vacuum-Lower Wolfcamp Pool for oil  
production from the Lower Wolfcamp formation comprising the NE/4  
of Section 3, Township 17 South, Range 34 East, NMPM, Lea County,  
New Mexico. The discovery well for said pool is the Pennzoil  
Company Gallagher-State Well No. 1 located in Unit A of said  
Section 3.

(3) That the applicant, Pennzoil Company, seeks the promul-  
gation of special rules and regulations for the North Vacuum-  
Lower Wolfcamp Pool, including a provision for 80-acre spacing  
units.

(4) That in order to prevent the economic loss caused by  
the drilling of unnecessary wells, to avoid the augmentation of

-2-

CASE No. 3535  
Order No. R-3206

risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the North Vacuum-Lower Wolfcamp Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(7) That this case should be reopened at an examiner hearing in March, 1968, at which time the operators in the subject pool should be prepared to appear and show cause why the North Vacuum-Lower Wolfcamp Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

That, effective April 1, 1967, temporary Special Rules and Regulations for the North Vacuum-Lower Wolfcamp Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS  
FOR THE  
NORTH VACUUM-LOWER WOLFCAMP POOL

RULE 1. Each well completed or recompleted in the North Vacuum-Lower Wolfcamp Pool or in the Lower Wolfcamp formation within one mile thereof, and not nearer to or within the limits of another designated Lower Wolfcamp oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well 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 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.

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CASE No. 3535

Order No. R-3206

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 governmental quarter-quarter section or lot or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. 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. Each well shall be located within 150 feet of the center of a governmental quarter-quarter section or lot.

RULE 5. The Secretary-Director may grant an exception to the 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 by another horizon. All operators offsetting the proposed 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 operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned an 80-acre proportional factor of 5.67 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 as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the North Vacuum-Lower Wolfcamp Pool or in the Lower

-4-  
CASE No. 3535  
Order No. R-3206

Wolfcamp formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before April 1, 1967.


(2) That each well presently drilling to or completed in the North Vacuum-Lower Wolfcamp Pool or in the Lower Wolfcamp formation within one mile thereof shall receive a 40-acre allowable until a Form C-102 dedicating 80 acres to the well has been filed with the Commission.


(3) That this case shall be reopened at an examiner hearing in March, 1968, at which time the operators in the subject pool may appear and show cause why the North Vacuum-Lower Wolfcamp Pool should not be developed on 40-acre spacing units.

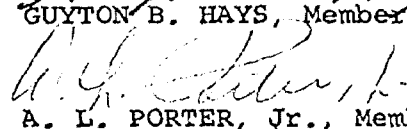
(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
GUYTON B. HAYS, Member

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

S E A L

esr/



Docket No. 7-67

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 8, 1967

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

The following cases will be heard before Daniel S. Nutter, Examiner, or  
Elvis A. Utz, Alternate Examiner:

CASE 3533: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation in its Continental Nix Well No. 24-1, located 330 feet from the North line and 660 feet from the West line of Section 24, Township 18 South, Range 35 East, Reeves-Devonian Pool, Lea County, New Mexico.

CASE 3534: Application of Newmont Oil Company for a waterflood expansion and unorthodox well locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its West Grayburg No. 4 Sand Waterflood Project, Loco Hills Pool, by drilling a water injection well at an unorthodox location 175 feet from the South line and 1500 feet from the East line of Section 10, and further, to drill two production wells at unorthodox locations 2600 feet from the North line and 1200 feet from the West line of Section 10, and 1190 feet from the North line and 150 feet from the East line of Section 11, all in Township 18 South, Range 29 East, Eddy County, New Mexico.

CASE 3531 (Readvertised)

Application of Texas Pacific Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the South Eunice Pool by the injection of water into the Seven Rivers-Queen formations through six wells in Sections 5, 8 and 9, Township 22 South, Range 36 East, Lea County, New Mexico.

CASE 3535: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Lower Wolfcamp production for its Gallagher State Well No. 1, located in Unit A of Section 3, Township 17 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special pool rules therefor, including a provision for 80-acre spacing.

Examiner Hearing March 8, 1967

CASE 3536: Application of Tenneco Oil Company for two unorthodox gas well locations, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Blanco-Mesaverde Gas Pool location of its Dawson Federal Well No. 1, located 835 feet from the North line and 1150 feet from the West line of Section 26, Township 27 North, Range 8 West, San Juan County, and its Jicarilla "C" Well No. 8, located 1850 feet from the North line and 790 feet from the West line of Section 13, Township 26 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 3206 (Reopened)

In the matter of Case No. 3206 being reopened pursuant to the provisions of Order No. R-2874-A which continued the special rules and regulations for the High Plains-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why the pool should not be developed on 80-acre or 40-acre spacing units.

CASE 3537: Application of Texaco Inc. for a waterflood project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Bisti Lower-Gallup Oil Pool by the injection of water into the Lower Gallup formation through its Northeast Bisti Unit Well No. 3 located in Unit O of Section 15, Township 25 North, Range 11 West, San Juan County, New Mexico.

ir/

RHODES, McCALLISTER & DURRETT

ATTORNEYS AT LAW

JERRY P. RHODES  
ORVILLE C. McCALLISTER, JR.  
J. M. DURRETT, JR.

619 SIMMS BUILDING  
ALBUQUERQUE, NEW MEXICO 87101

TELEPHONE 243-9746

February 14, 1967

*Case 5525*

Oil Conservation Commission  
Box 2088  
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.  
Secretary-Director

Gentlemen:

I am enclosing an original and two copies of an application on behalf of Pennzoil Company. Please docket this application for your next scheduled examiner hearing.

As this case involves a state lease, I am forwarding a copy of the application to the State Land Office. I also am forwarding a copy of the application to your Hobbs District Office.

Very truly yours,

Rhodes, McCallister & Durrett

By *J. M. Durrett, Jr.*  
J. M. Durrett, Jr.

JMD:ab  
encis.

cc: State Land Office  
Oil Conservation Commission, Hobbs

DOCKET MAILED

Date *2-24-67*  
*R*

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. 3535  
Order No. R-3206

APPLICATION OF PENNZOIL COMPANY  
FOR SPECIAL POOL RULES, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 8, 1967,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 17th day of March, 1967, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

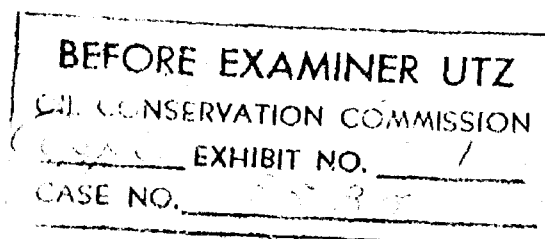
FINDS:

(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 by Order No. R-3205, effective April 1, 1967, the  
Commission created the North Vacuum-Lower Wolfcamp Pool for oil  
production from the Lower Wolfcamp formation comprising the NE/4  
of Section 3, Township 17 South, Range 34 East, NMPM, Lea County,  
New Mexico. The discovery well for said pool is the Pennzoil  
Company Gallagher-State Well No. 1 located in Unit A of said  
Section 3.

(3) That the applicant, Pennzoil Company, seeks the promul-  
gation of special rules and regulations for the North Vacuum-  
Lower Wolfcamp Pool, including a provision for 80-acre spacing  
units.

(4) That in order to prevent the economic loss caused by  
the drilling of unnecessary wells, to avoid the augmentation of



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CASE No. 3535

Order No. R-3206

risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, temporary special rules and regulations providing for 80-acre spacing units should be promulgated for the North Vacuum-Lower Wolfcamp Pool.

(5) That the temporary special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(6) That the temporary special rules and regulations should be established for a one-year period in order to allow the operators in the subject pool to gather reservoir information to establish the area that can be efficiently and economically drained and developed by one well.

(7) That this case should be reopened at an examiner hearing in March, 1968, at which time the operators in the subject pool should be prepared to appear and show cause why the North Vacuum-Lower Wolfcamp Pool should not be developed on 40-acre spacing units.

IT IS THEREFORE ORDERED:

That, effective April 1, 1967, temporary Special Rules and Regulations for the North Vacuum-Lower Wolfcamp Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS  
FOR THE  
NORTH VACUUM-LOWER WOLFCAMP POOL

RULE 1. Each well completed or recompleted in the North Vacuum-Lower Wolfcamp Pool or in the Lower Wolfcamp formation within one mile thereof, and not nearer to or within the limits of another designated Lower Wolfcamp oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well 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 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.

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CASE No. 3535  
Order No. R-3206

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 governmental quarter-quarter section or lot or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. 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. Each well shall be located within 150 feet of the center of a governmental quarter-quarter section or lot.

RULE 5. The Secretary-Director may grant an exception to the 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 by another horizon. All operators offsetting the proposed 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 operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned an 80-acre proportional factor of 5.67 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 as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the North Vacuum-Lower Wolfcamp Pool or in the Lower

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CASE No. 3535

Order No. R-3206

Wolfcamp formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before April 1, 1967.

(2) That each well presently drilling to or completed in the North Vacuum-Lower Wolfcamp Pool or in the Lower Wolfcamp formation within one mile thereof shall receive a 40-acre allowable until a Form C-102 dedicating 80 acres to the well has been filed with the Commission.

(3) That this case shall be reopened at an examiner hearing in March, 1968, at which time the operators in the subject pool may appear and show cause why the North Vacuum-Lower Wolfcamp Pool should not be developed on 40-acre spacing units.

(4) 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

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

S E A L

esr/

NEW MEXICO OIL CONSERVATION COMMISSION  
APPLICATION FOR DISCOVERY ALLOWABLE AND CREATION OF A NEW POOL

Form C-199  
Adopted 9-1-66

NOTE: This form is to be filed and attachments made in accordance with the provisions of Rule 509.  
If discovery is claimed for more than one zone, separate forms must be filed for each.

Operator <b>PENNZOIL COMPANY</b>		Address <b>1007 Midland Savings Bldg., Midland, Tex.</b>	
Lease Name <b>GALLAGHER-STATE</b>		Well No. <b>1</b>	County <b>Lea</b>
Well Location Unit Letter <b>A</b> ; <b>660</b> Feet from The <b>North</b> Line and <b>660</b> Feet From the <b>East</b> Line of Section <b>3</b> , Township <b>17-S</b> , Range <b>34-E</b> , NMPM			
Suggested Pool Names (List in order of preference) <b>1. North Vacuum Lower Wolfcamp</b>			
Name of Producing Formation <b>Wolfcamp</b>	Perforations <b>2 holes @ 10,689'-693'-697'-699'</b>		Date of Filing Form C-104 <b>Jan. 18, 1967</b>
Was "Affidavit of Discovery" Previously Filed For This Well in this Pool? <b>No</b>	If Yes, Give Date of Filing <b>--</b>	Date Well was Spudded <b>Nov. 23, 1966</b>	Date Compl. Ready to Prod. <b>Jan. 13, 1967</b>
Total Depth <b>10,997'</b>	Plugged Back Depth <b>10,931'</b>	Depth Casing Shoe <b>10,997'</b>	Tubing Depth <b>10,723'</b>
Elevation (Gr., DF, RKB, RT, etc.) <b>4077 RKB</b>			
Oil Well Potential (Test to be taken only after all load oil has been recovered) <b>391</b> Bbls. Oil Per Day Based On <b>391</b> Bbls In <b>24</b> Hours; <b>0</b> Bbls Water Per Day Based On <b>0</b> Bbls In <b>24</b> Hours; Gas Production During Test: <b>771</b> MCF; Gas-Oil Ratio: <b>1974</b> Method Of Producing: <b>Flow</b> Chk. Size <b>16/64"</b>			

NEAREST PRODUCTION TO THIS DISCOVERY (Includes past and present oil or gas producing areas and zones whether this discovery is based on horizontal or vertical separation):

Pool Name	Name of Producing Formation	Top of Pay	Bottom of Pay	Currently Producing?
<b>Vacuum Gray-SA</b>	<b>Grayburg-San Andres</b>	<b>4,600'</b>	<b>4,800'</b>	<b>Yes</b>
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Pool <b>1700' South</b>		Vertical Distance from Subject Discovery Zone to Producing Interval this Pool <b>5,856'</b>		

NEAREST COMPARABLE PRODUCTION (Includes past and present oil or gas production from this pay or formation only):

Pool Name	Top of Pay	Bottom of Pay	Currently Producing?
<b>Kemnitz Lower Wolfcamp</b>	<b>10,755'</b>	<b>10,788'</b>	<b>Yes</b>
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Comparable Pool <b>10,000' North-Northwest</b>			

Is "County Deep" Discovery Allowable Requested for Subject Discovery Well? <b>NO</b>	If Yes, Give Name, Location, and Depth of Next Deepest Oil Production in this County
---	--

Is the Subject Well Multiple Completion? <b>NO</b>	Is Discovery Allowable Requested for other Zone(s)? <b>--</b>	If Yes, Name all Such Formations <b>--</b>
---	--	---

LIST ALL OPERATORS OWNING LEASES WITHIN ONE MILE OF THIS WELL (Attach additional sheet if necessary)

NAME	ADDRESS
<b>Gulf Oil Corporation</b>	<b>Box 1938 - Roswell, New Mexico</b>
<b>Mobil Oil Corporation</b>	<b>Box 820 - Roswell, New Mexico</b>
<b>Atlantic Richfield Company</b>	<b>Box 1978 - Roswell, New Mexico</b>
<b>Southern Union Producing Company</b>	<b>1636 Chama - Hobbs, New Mexico</b>
<b>C. H. Gallagher, Jr.</b>	<b>1603 Broadway - Room 8 - Lubbock, Tex.</b>
<b>Cities Service Oil Company</b>	<b>Box 760 - Roswell, New Mexico</b>
<b>Rock Island Oil &amp; Refining Company</b>	<b>321 West Douglas - Wichita, Kansas</b>
<b>Marathon Oil Company</b>	<b>Box 1398 - Roswell, New Mexico</b>

Attach evidence that all of the above operators have been furnished a copy of this application. Any of said operators who intends to object to the designation of the subject well as a discovery well, eligible to receive a discovery allowable, must notify the appropriate District Office and the Santa Fe Office of the Commission of such intent in writing within ten days after receiving a copy of this application.

Remarks:

**BEFORE EXAMINER NUTTER**

**OIL CONSERVATION COMMISSION**

**EXHIBIT NO. B**

**CASE NO. 3535**

CERTIFICATION

I hereby certify that all rules and regulations of the New Mexico Oil Conservation Commission have been complied with, with respect to the subject well, and that it is my opinion that a bona fide discovery of a hitherto unknown common source of oil supply has been made in said well. I further certify that the discovery allowable for the subject well, if authorized, will be produced from the subject zone in this well only. Further, that the information given herein and attached hereto is true and complete to the best of my knowledge and belief.

Production Manager

February 10, 1967



\$182.50

PENNZOIL COMPANY

Gallagher - State No. 1

Stabilization Tests

<u>Date</u>	<u>Choke Size (In.)</u>	<u>Tbg. Press. (Psi)</u>	<u>Oil (Bbls/24 hrs)</u>	<u>BS&amp;W</u>	<u>Gas (MCF/24 hrs)</u>	<u>GOR</u>
1-27-67	3/64	1375	120.03	2/10	215.5	1795
1-28-67	8/64	1360	120.03	2/10	221.5	1843
1-29-67	10/64	1350	215.22	1/10	339.0	1575
1-30-67	10/64	1350	211.08	2/10	339.0	1605
2-2-67	12/64	1320	269.02	2/10	433.0	1620
2-3-67	12/64	1340	270.40	2/10	427.0	1570
2-4-67	14/64	1320	373.87	2/10	612.0	1637
2-6-67	14/64	1300	373.87	2/10	598.0	1600

268

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
<i>Aggel</i> EXHIBIT NO. <u>C</u>
<u>3535</u>

PENNZOIL COMPANY

GALLAGHER STATE No. 1

Bottom Hole Pressure Data

<u>Date</u>	<u>Pressure (psi)</u>	<u>Depth</u>	<u>Shut-In Time</u>
1-2-67	4144 *	10,700	--
1-19-67	4076	10,694 **	100 Hours
2-21-67	3944	10,694 **	24 Hours

\* Initial shut-in pressure on DST extrapolated to maximum.

\* \* Mid-point of perforations.

*Well head pressure 2000 3000 lbs*

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<i>Agg. 6</i>	EXHIBIT NO. <u>D</u>
CASE F	<u>3535</u>

TEFTELLER, INC.  
RESERVOIR ENGINEERING DATA  
Midland, Texas

Well : GALLAGHER-STATE NO. 1

Page 2 of 5

Field : UNDESIGNATED

File 3-2321-PI

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1967			Elapsed	Daily	Wellhead	BHP @	BHP @
Date	Status of Well	Time	Time	Rate	Pressure	10644'	10694'
			Hrs.Min.	Oil B/D	Tubing	Psig	Psig
2-20	On location	17:00					
"	Flowing 12/64" ck	18:00		264.96	1251		
"	Inst. @ 10644'	18:40				3832	3845
"	"	19:00				3832	3845
"	"	20:00				3832	3845
"	Off btm. to install						
"	adj. choke	21:00		264.96	1250	3832	3845
"	Shut in to install						
"	adj. choke	21:15					
"	Opened 13/64" adj.						
"	choke	21:25					
"	Inst. @ 10644'	21:40				3859	3872
"	"	22:00				3838	3851
"	Choke plugging	23:00				3876	3889
2-21	"	00:00				3873	3886
"	"	01:00				3893	3906
"	Choke plugged	01:45				3893	3906
"	"	01:46				3910	3923
"	"	02:00				3910	3923
"	"	04:00				3917	3930
"	"	06:00		*132.48		3914	3927
"	Choke closed	07:00	0 00			3917	3930
"	"	08:00	1 00			3924	3937
"	"	10:00	3 00			3927	3940
"	"	12:00	5 00			3929	3942
"	"	14:00	7 00			3931	3944
"	"	16:00	9 00			3931	3944
"	"	19:00	12 00			3931	3944
"	"	23:00	16 00			3931	3944
2-22	"	03:00	20 00			3931	3944
"	"	07:00	24 00			3931	3944
"	"	10:30	27 30		1316	3931	3944

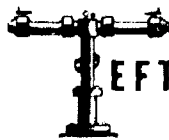
\* Unsteady

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

*Aggel* EXHIBIT NO. E

CASE NO. 3535



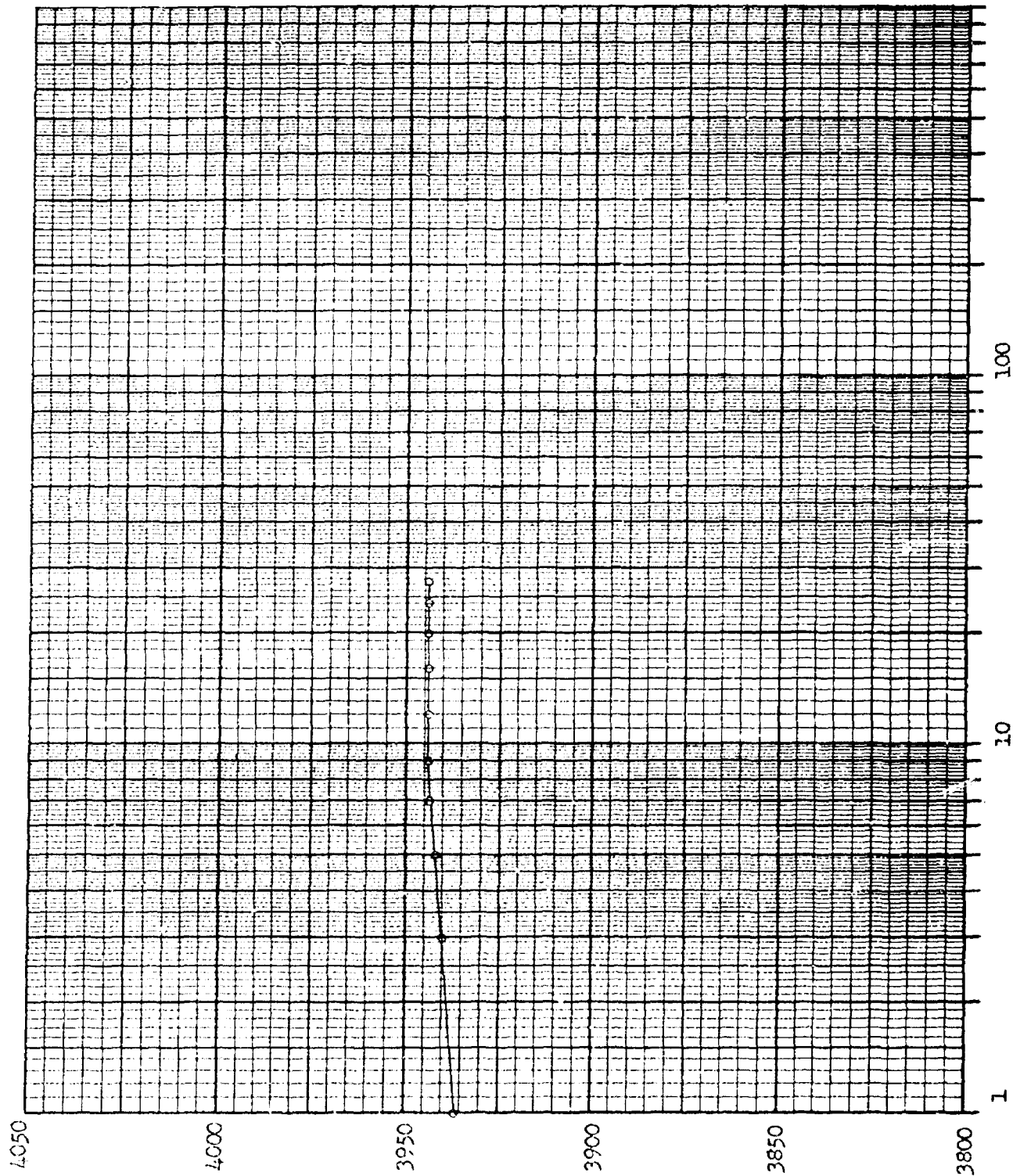
EFTELLER, INC.

reservoir engineering data  
MIDLAND, TEXAS

Page 3 of 5  
File 3-2321-PI

Company	PENNZOIL COMPANY	Formation	LOWER WOLF CAMP
Well	GALLAGHER-STATE NO. 1	County	LEA
Field	UNDESIGNATED	State	NEW MEXICO

BUILD UP CURVE



PRESSURE : PSIG @ 10694 FEET

SHUT IN TIME : HOURS

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMAS BLDG. • P. O. BOX 1092 • PHONE 2-13-4491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 6, 1968

-----  
IN THE MATTER OF: (Reopened) )  
 )  
Case No. 3535 being reopened )  
pursuant to the provisions of ) Case 3535  
Order No. R-3206, which order )  
established 80-acre spacing )  
units for the North Vacuum- )  
Lower Wolfcamp Pool, Lea County, )  
New Mexico, for a period of one )  
year. )  
-----

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

## NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOHearing Date MARCH 6, 1968TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Harold G. Vest	Getty Oil Co.	Hobbs, N.M.
Richard A. Parnell	M, F, A, H & M	Santa Fe
Jm Dunnett Jr	Rhodes, McCallister & Dunnett	Albuquerque, N.M.
B. C. SINCLAIR	PENNZOIL CO.	MIDLAND, TEX.

MR. UTZ: Case 3535.

MR. HATCH: Case 3535, reopened. In the matter of Case No. 3535 being reopened pursuant to the provisions of Order No. R-3206, which order established 80-acre spacing units for the North Vacuum-Lower Wolfcamp Pool, Lea County, New Mexico, for a period of one year.

(Whereupon, Applicant's Exhibits 1 through 9 were marked for identification.)

MR. DURRETT: If the Examiner please, J. M. Durrett, Junior, appearing on behalf of Pennzoil Company.

MR. UTZ: Are there other appearances? There are none.

MR. DURRETT: I'll have one witness, Mr. Examiner if he can be sworn at this time.

(Witness sworn.)

B. C. SINCLAIR

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

DIRECT EXAMINATION

BY MR. DURRETT:

Q Please state your name and position.

A B. C. Sinclair, petroleum engineer.

Q Where are you located, Mr. Sinclair?

A I'm located in Midland, Texas.

Q Who are you employed by?

A Employed by Union Producing Company.

Q What's Union Producing Company's connection with Pennzoil Company?

A Union Producing Company is a subsidiary of Pennzoil Company.

Q Now, Mr. Sinclair, this is a show cause hearing to show cause why the North Vacuum-Lower Wolfcamp Pool should not be developed on 40-acre spacing units. Are you prepared to present testimony here today to substantiate the continuation of 80-acre spacing in this field?

A I am.

Q Now, will you refer to your exhibits, I believe what has been marked as Exhibit No. 1 is a copy of Order No. R-3206 which was previously entered by the Commission. Is that the order establishing the 80-acre spacing in this field?

A Yes, it is.

Q What does that order provide for in the way of well locations?

A This order provides that wells will be located within 150 feet of the center of a quarter-quarter section, governmental quarter-quarter section. It provides for



80-acre spacing.

Q That's just mainly for informational purposes, is that correct?

A That's true.

Q Will you please refer to your Exhibit No. 2 and state to the Examiner what that is?

A Exhibit No. 2 is a structure map with the contours drawn on the top of the Wolfcamp lime marker, which is a distinguishable characteristic of the Lower Wolfcamp pay. This map shows the well locations in the North Vacuum-Lower Wolfcamp field. It shows the 80-acre units that have been designated for each producing well in the field.

I might point out at this time that the discovery well for this field was the Pennzoil Gallagher State No. 1. This well was completed on January the 15th, 1967. Since its completion there have been 11 wells drilled to the Lower Wolfcamp pay. There have been two dry holes drilled and nine of the wells have been producers. However, one of the nine wells produced only two months from the Lower Wolfcamp and was then recompleted to the Abo zone.

I might point out that the two wells shown on Exhibit 2, the two southeast-most wells are not distinguished as completions, not in the Lower Wolfcamp. These two completions

are in the Abo and are not in the Lower Wolfcamp at the present time.

The Mobil State Bridges 122 well was dry in the Lower Wolfcamp, the Pennzoil Marathon State No. 1 well produced from the Lower Wolfcamp for two months and was then recompleted.

Q How many operators do you have in this pool?

A There are three operators in this field.

Q Is that Pennzoil, Mobil and Gulf?

A That's right.

Q Anything else pertinent about this exhibit?

A Well, I might point out that the well locations of the wells completed in the Wolfcamp reservoir at this time are all on normal 80-acre spaced units.

Q Now, Mr. Sinclair, before we get into engineering testimony, I don't believe I've actually qualified you as an expert. Have you testified before the Commission as an expert previously?

A No, I haven't.

Q Would you please briefly give us your educational qualifications and a little of your experience background?

A I received a Bachelor of Science Degree in petroleum engineering and a Bachelor of Science Degree in

mechanical engineering from Texas A & M University in 1956. I was employed by Union Producing Company shortly thereafter and worked as a drilling production and reservoir engineer in Mississippi, north Louisiana and east Texas for about eleven years. For the past eight months I have been employed as a reservoir engineer and production engineer in west Texas and southeastern New Mexico.

Q How long have you been working with the North Vacuum-Lower Wolfcamp Pool?

A About eight months.

MR. DURRETT: Is the witness qualified as an expert?

MR. UTZ: Yes, sir, he is.

Q (By Mr. Durrett) Now, Mr. Sinclair, would you please refer to your Exhibit No. 3 and state what that represents?

A Exhibit No. 3 is an isopachous map of the North Vacuum-Lower Wolfcamp reservoir. It simply shows the size and location of the reservoir. It shows the net pay thickness of the Lower Wolfcamp zone. This net pay is based on interpretation of sonic and neutron logs run in these wells and a porosity cutoff point of three percent was used in determining the net pay thickness of the zone.

Q Let's go to your next exhibit, which I believe is

No. 4. That should be production data, is that correct?

A Yes. This exhibit is simply a tabular presentation of the production history of this reservoir. I have listed here the oil, water and gas production by months for the field from its date of discovery through January, 1968.

Also I have shown the gas-oil ratio cumulative for the reservoir for each month. The exhibit shows that to February 1st, 1968 there have been 404,797 barrels of oil produced, 589,202 MCF of gas produced, and 58 barrels of water.

Q Now, am I correct that most of that water came from one well?

A All of the water came from the well that was recompleted after two months and there's a strong possibility that it was not formation water but acid water. It was reported to the Commission as water production, though.

Q So you virtually have no water production in the field at this time?

A This is correct.

Q Anything else pertinent about that exhibit?

A No, sir.

Q Let's go to No. 5 then.

A Exhibit 5 is a graphical presentation of the same data that was shown in Exhibit 4. We have the oil, gas and

water production plotted against time. It's shown there that the present oil rate is around 58,000 barrels a month. The present gas rate is around 100 MCF of gas a month, and the water production is less than fifty barrels or less than one hundred barrels of water a month, actually it's zero.

The exhibit also shows the decline in bottomhole pressure with time and shows the gas-oil ratio history of the reservoir.

Q Let's go to Exhibit No. 6, which is your reservoir and fluid properties.

A This exhibit shows the average reservoir and fluid properties of the Lower Wolfcamp reservoir and of the fluid that it contains. The pertinent data here that I feel is significant for our purposes is the porosity, ten percent, the permeability up to 150 millidarcies, the recovery factor of 25 percent of the original oil in place, and the reservoir energy mechanism, that being solution gas drive. I feel that these reservoir properties and fluid properties indicate that this reservoir contains a fluid that is readily transmissible through the reservoir and the rock has sufficient flow properties to permit the fluid to flow readily.

Q Let's move on to Exhibit No. 7, which is bottomhole pressure data.

A This exhibit is a plot of bottomhole pressure versus cumulative oil production. The purpose of this exhibit is to establish the recoverable oil that we expect to get from the reservoir by extrapolating the bottomhole pressure versus cumulative oil curve. We have obtained an estimated oil recovery of a million and eighty thousand barrels of oil at an abandonment bottomhole pressure of 500 pounds. We feel like this will be very close to the recovery that we will get from the reservoir.

Q What does your Exhibit No. 8 show?

A Exhibit No. 8 is an economic comparison of the economics for this reservoir, comparing 40-acre space drilling to 80-acre space drilling. The recovery, as shown, is estimated to be a million and eighty thousand barrels of oil and a million six hundred twenty thousand MCF of gas.

The value of this production is shown for 40-acre and 80-acre spacing. Then deducted from that to arrive at a net profit or the royalty interest deduction, the severance tax deduction, the expenses, being comprised of the drilling completion and equipping cost estimated at \$280,000.00 per well and the operating cost estimated at six thousand per well per year.

Q Now, what have you got in that operating cost

figure? Would you go into detail on that?

A Yes. This is the total operating cost for a well for a year's period. This would average about \$500.00 per month per well and in this figure, this is assumed that the most of the life of the reservoir will be a pumping life. There are actually only two wells on the pump now, but in the very near future all the wells will be on the pump and this is based on the estimated operating cost to operate a pumping well at 10,700 feet.

In this figure are the labor costs for the pumpers, the maintenance of the well and the lease and the repairs to the surface and downhole equipment that will be required. The exhibit shows that the net profit under 80-acre space drilling that we have now will be \$997,063.00. This is a net profit per well of \$124,633.00, for a profit to investment ratio of .62 to one. Under 40-acre spaced drilling where we would have twice as many wells, the operating cost and the development cost would be double and a net loss of \$842,937.00 would result. This does not consider actually the three dry holes that have been drilled. Two outright dry holes and one that produced only two months.

Q So if you considered those, your loss would be greater?

A The loss would be greater and your profit lower under the 80-acre spaced situation.

Q So you show a profit to investment ratio of .62 to one?

A Yes.

Q Now, before proceeding to your Exhibit No. 9, let me ask you this: Have you conducted or attempted to conduct an interference test in this reservoir?

A Yes. We, in connection with a cooperative bottomhole pressure survey in the early part of October of 1967, an interference test was attempted and the field was shut-in and static bottomhole pressures were recorded in all the then completed wells and a bottomhole pressure instrument was left in the Pennzoil Gallagher State No. 1 well and the other wells in the field were returned to production and the bottomhole pressure instrument was removed from the Gallagher State No. 1 well forty-eight hours after the other wells had been returned to production and the pressures shown showed no interference.

We feel like we pulled the bomb prematurely and that the pressure data that we're going to show on the next exhibit will clearly indicate that the wells in the reservoir are in excellent communication with one another, and after



pulling the bomb we returned the well to production before we checked the chart. Therefore, we did not know that we had recorded an interference until we had the well back on production and, therefore, failed to get our interference test, but we feel like we have sufficient bottomhole pressure data to clearly justify the 80-acre spacing, as we'll show on the next exhibit.

Q Let's go to that exhibit now. It's No. 9, I believe. Would you briefly point out what's pertinent on that exhibit to the Examiner?

A Across the top of this exhibit I have listed the wells in the reservoir that have been completed in the order of their completion. On the left-hand side I have shown the dates of the various surveys that have been run. I would like to call your attention to each of the first few wells individually there now.

The first well shown is the Gallagher State No. 1. It recorded an original pressure of 4136 pounds. This is considered to be the original reservoir pressure for this reservoir. Reading down that column now you can see that the pressure in this reservoir has shown a steady decline down to the survey run on February 4, 1968, where we recorded a pressure of 2341 pounds.

In looking over to the next well, the Mobil State No. 1, this well was completed, or the pressure was run on April 11th, 1967, and it recorded an initial pressure of 3734 pounds. This indicates that the area around this well had suffered drainage from the production from the Gallagher State No. 1 well and indicates that the Gallagher State No. 1 is capable of draining considerably in excess of 80 acres.

The next well, the Marathon State No. 1 also recorded a pressure that was lower than the original reservoir pressure and also indicates that this area had suffered drainage from the production of the first two wells. You can follow this same trend right on across through all the wells; each subsequent well drilled encountered a pressure that was substantially lower than the original pressure, and also I would like to point out that the individual well pressures on the surveys that were run in which all the wells in the reservoir were shut-in and the reservoir allowed to stabilize and then the pressure recorded, that excellent agreement between the pressures recorded on these wells is shown.

For instance, I would like to refer your attention to the August 4th, 1967 survey. The pressures recorded there are 3247 and 3243, only a four-pound difference between the three wells, the highest to the lowest were recorded there.

This indicates that these wells are in excellent communication with one another. It indicates that the reservoir is being uniformly and efficiently drained. You can see the same thing on the survey run on October the 3rd, 1967. The pressures recorded there were 2898, 2933, 2845, 2759 and 2371. Again, here we have very close agreement of pressures. We do have about a 150-pound difference from the high to the low pressure. This is a more normal situation and still indicates that the wells are in excellent communication and the reservoir is being uniformly and efficiently drained.

The 2371-pound pressure, as the footnote states, was still building up, and this well is a Gulf well that's off on the north edge of the reservoir and is in a tighter portion of the reservoir and simply not stabilized, but I feel very sure that this well would have stabilized near the pressures of the other wells had it been left long enough.

Then in the latest survey there on February 4th, 1968, the pressures again are in very close agreement and very strong evidence that the reservoir is being uniformly and very efficiently drained.

Q What's the distance between the two furthest wells, approximately?

A Well, the reservoir covers an area of approximately

800 acres. The distance between the two furthest apart wells is approximately a mile, one mile.

Q And your bottomhole data shows pretty close figures even on those two wells?

A Yes. This is really unusual to get this close agreement. This is the best agreement across a reservoir that I have ever seen for agreement between bottomhole pressures. It's not uncommon to see a pretty good relation of pressures from across the reservoir with the high pressure areas being prevalent and low pressure areas being present, but this is very close agreement between the individual pressures.

Q Mr. Sinclair, as a petroleum engineer, based upon the information that you have presented to the Commission this morning, are you of the opinion that one well in the North Vacuum-Lower Wolfcamp Pool will efficiently and economically drain and develop 80 acres?

A Yes, I am.

Q Do you have anything additional to present to the Examiner at this time?

A No, sir.

Q You did receive some correspondence from the other operators in the pool, is that correct?

A Yes. I received copies of letters to the Commission.

Q From Gulf and Mobil?

A Yes.

Q I believe the Commission has those. Mr. Sinclair, were Exhibits 2 through 9 prepared by you or under your supervision?

A Yes.

Q And Exhibit 1 is a copy of an Oil Commission order, is that correct?

A That is correct.

MR. DURRETT: If the Examiner please, at this time I would move the introduction of Exhibits 1 through 9.

MR. UTZ: Without objection, the Exhibits 1 through 9 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 9 were offered and admitted in evidence.)

MR. DURRETT: That will conclude my direct examination.

MR. HATCH: We do have the letters.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Sinclair, you did attempt to run an interference test, I believe, did you not?

A Yes, sir. That's right.

Q Was that shown somewhere on the exhibit?

A No, sir, it was not.

Q Which well did you have the bomb in?

A The bomb was in the Pennzoil Gallagher State No. 1, which is in the northeast corner of Section 3.

Q How long did you say you left it in there?

A Forty-eight hours.

Q What wells did you produce?

A At that time there were, I believe we referred to Exhibit No. 9, we can see which wells were completed. That was on October 10th, bottomhole pressure survey, and the first six wells shown were completed at that time. That would be our Gallagher State over through Gulf's Lee PS State No. 1, with the exception of our Marathon State, which had been recompleted at that time.

All of the wells except our Gallagher State were returned to production for that forty-eight-hour period that I have referred to. I might state further there that based on bottomhole pressure buildup test and the reservoir fluid analysis that we had obtained from the Gallagher State, we felt that forty-eight hours would be sufficient. However, all the technical literature clearly states that longer times than this are necessary for interference tests to be

conclusively run in most cases and it's just an error in judgment on our part that we failed to leave this bomb in there long enough to record this interference.

Q So you had the three nearest offset wells all producing, right?

A Yes, sir, that's correct.

Q Refer to Exhibit No. 8. As I interpret this exhibit, the \$979,063.00 is for how many wells, the whole pool --

A That's for --

Q -- or just your wells?

A All wells. That includes Gulf's one well and Mobil's two wells. We have five of the wells that are currently producing.

Q On the Exhibit No. 7 is the basis for your economics on Exhibit 8?

A Yes.

Q You don't anticipate any flattening out of that curve?

A No, sir, it would be normal theoretically for the curve to break off and show a steeper decline toward the end of the life of the reservoir due to the solution gas drive mechanism, and as the gas breaks out of solution, of course,

you know your reservoir energy is depleted at a more rapid rate and the pressures actually decline at a greater rate for each barrel of oil that you recover as your ratios increase.

Q Have you made any studies as to possible waterflood for this pool?

A Yes, sir. We have given that some thought. No study as such has been prepared. We have met with the other operators for this purpose one time and there's no formal committee been established so far, but we definitely feel that this reservoir will have some secondary recovery possibilities later on.

Q Referring to Exhibit No. 5, I haven't quite had the time to interpret this yet. The red line on the left is GOR?

A No, sir. The red line is labeled "oil" up near the top left-hand corner.

Q Maybe I am looking at it wrong.

A No, sir. You are looking at it properly.

Q I am now, aren't I?

A Yes, that's right. This is the monthly oil production plotted against time in months and simply shows the oil produced for each month for the period of time in which the reservoir has been active. The same type data is shown for gas, the green line, and for water, the blue line,



right along the bottom of the exhibit, and then there are three other lines, the purple line is the bottomhole pressure plotted against time. The orange line is the gas-oil ratio plotted against time, and the heavy black line is the number of wells. The well development, you can see, has reached a total of eight wells at this time.

Q Now, on Exhibit No. 4, I believe you said the 44 barrels, well, as I understood you, both the 44 and the 14 barrels of water was from the well that was only on production for two months?

A That is correct.

Q That was the Marathon State 1?

A That's correct.

Q It would seem that through the northwest you may have several more locations, is that interpreting your data correctly?

A Yes, sir, it would seem that way. We feel that we have possibly a location there in the southeastern portion of Section 33 in consideration that is being given to the development over there at this time.

Q To sum up your argument here, you believe that Exhibit 9 shows interference in good fashion from all the wells in the pool?

A That is very true.

MR. UTZ: Are there any other questions of the witness? The witness may be excused.

(Witness excused.)

MR. UTZ: Are there any other statements? The case will be taken under advisement. The hearing is adjourned.

I N D E X

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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 12th day of March, 1968.

NOTARY PUBLIC

My Commission Expires:

June 19, 1971.

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the descriptive hearing of Case No. 3535,  
heard by me on March 6, 1968.  
Thos. G. [Signature], District  
New Mexico Oil Conservation Commission