

CASE 1669: SHOW CAUSE HEARING

MAY 17, 1961

(Pan American Petroleum Corp.)

*Notata  
Noted for  
May 17 1961*

*5/16/61*

Casa No.

1669

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Application, Transcript,  
Small Exhibits, Etc.

DOCKET: REGULAR HEARING - WEDNESDAY, MAY 17, 1961

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

- ALLOWABLE:
- (1) Consideration of the oil allowable for June, 1961.
  - (2) Consideration of the allowable production of gas for June, 1961, for ten prorated pools in Lea County, New Mexico, and also presentation of purchaser's nominations for the six-month period beginning July, 1961; consideration of the allowable production of gas for nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for June, 1961.

CASE 2275: Application of the Oil Conservation Commission on its own motion to consider prorating the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico.

CASE 1669: In the matter of the hearing called by the Oil Conservation Commission to permit Pan American Petroleum Corporation and all other interested parties to appear and show cause why the special Rules and Regulations in effect in the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, should be continued beyond June 1, 1961.

CASE 2276: Application of Shell Oil Company for an amendment of Rule 1114. Applicant, in the above-styled cause, seeks an amendment of Rule 1114 to provide for a revised Form C-115 to be used for manually prepared monthly production reports, and to provide for Form C-115-EDP to be used for reports prepared by mechanical data processing equipment as an alternative to the revised Form C-115.

CASE 2215: (Continued)  
In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the promulgation of an order prohibiting the flaring of casinghead gas from oil wells in the Cha Cha-Gallup and Totah-Gallup Oil Pools, San Juan County, New Mexico.

CASE 2277: Application of the Oil Conservation Commission on its own motion to determine the vertical limits of the Justis-Blinebry Pool, Lea County, New Mexico, and to grant an allowable for each zone of any multiple completion previously authorized which is completed within such vertical limits, such allowable to extend for a period not to exceed 18 months from the date allowable was initially granted.

CASE 2278: Southeastern New Mexico nomenclature case calling for the creation of new Pools and the abolishment and extension of certain existing pools in Eddy, Lea, and Roosevelt Counties, New Mexico.

(a) Create a new gas pool for Queen production, designated as the Arkansas Junction-Queen Gas Pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM  
SECTION 1: SW/4

(b) Create a new oil pool for Delaware production, designated as the Triste Draw-Delaware Pool, and described as:

TOWNSHIP 23 SOUTH, RANGE 32 EAST, NMPM  
SECTION 35: NE/4

(c) Abolish the Bluitt-Pennsylvanian Pool, described as:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM  
SECTION 13: SE/4  
SECTION 24: E/2  
SECTION 25: NE/4

TOWNSHIP 8 SOUTH, RANGE 37 EAST, NMPM  
SECTION 18: SW/4  
SECTION 19: A11  
SECTION 20: A11  
SECTION 21: SW/4  
SECTION 27: N/2 SW/4  
SECTION 28: N/2 S/2 and NW/4  
SECTION 29: A11  
SECTION 30: A11  
SECTION 32: N/2 NW/4



- (d) Extend the Allison-Pennsylvanian Pool, to include:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM

SECTION 13: SE/4

SECTION 24: E/2

SECTION 25: NE/4

TOWNSHIP 8 SOUTH, RANGE 37 EAST, NMPM

SECTION 18: SW/4

SECTION 19: A11

SECTION 20: A11

SECTION 21: SW/4

SECTION 27: W/2

SECTION 28: N/2 and N/2 S/2

SECTION 29: A11

SECTION 30: A11

SECTION 31: N/2 and SE/4

SECTION 32: N/2 NW/4

- (e) Extend the Anderson Ranch-Wolfcamp Pool, to include:

TOWNSHIP 15 SOUTH, RANGE 32 EAST, NMPM

SECTION 33: E/2 SW/4

- (f) Extend the South Benson-Yates Pool, to include:

TOWNSHIP 19 SOUTH, RANGE 30 EAST, NMPM

SECTION 23: NE/4

- (g) Extend the Empire-Abo Pool, to include:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

SECTION 30: SW/4

- (h) Extend the Eumont Gas Pool, to include:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM

SECTION 19: SW/4

- (i) Extend the Fowler-Paddock Gas Pool, to include:

TOWNSHIP 24 SOUTH, RANGE 37 EAST, NMPM

SECTION 15: SE/4

SECTION 22: NE/4

- (j) Extend the Langlie Mattix Pool, to include:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM  
SECTION 30: NW/4 NE/4

- (k) Extend the Lea-Bone Springs Pool, to include:

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM  
SECTION 12: NW/4

- (l) Extend the Lea-Devonian Pool, to include:

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM  
SECTION 12: NW/4

- (m) Extend the Maljamar Pool, to include:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM  
SECTION 2: NW/4

- (n) Extend the Skaggs-Glorieta Pool, to include:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM  
SECTION 11: SE/4

- (o) Extend the Wantz-Abo Pool, to include:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM  
SECTION 29: E/2 NE/4

CASE 2279:

Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in San Juan and Rio Arriba Counties, New Mexico.

- (a) Extend the Cha Cha-Gallup Oil Pool to include:

TOWNSHIP 28 NORTH, RANGE 13 WEST, NMPM,  
SECTION 9: W/2  
SECTION 22: NW/4  
SECTION 23: W/2  
SECTION 26: N/2 NW/4

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM,  
SECTION 31: SE/4  
SECTION 32: SW/4

TOWNSHIP 29 NORTH, RANGE 14 WEST, NMPM,  
SECTION 16: S/2 SW/4  
SECTION 18: E/2 SE/4  
SECTION 22: E/2 SE/4  
SECTION 23: S/2 SW/4  
SECTION 36: SW/4

- (b) Extend the Escrito-Gallup Oil Pool, to include:

TOWNSHIP 24 NORTH, RANGE 7 WEST, NMPM  
SECTION 7: S/2 SW/4  
SECTION 15: SE/4 SW/4  
SECTION 16: N/2 SW/4  
SECTION 19: SE/4 NE/4

TOWNSHIP 24 NORTH, RANGE 8 WEST, NMPM,  
SECTION 12: E/2 SE/4  
SECTION 13: SE/4 NE/4

- (c) Extend the Horseshoe-Gallup Oil Pool, to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM,  
SECTION 35: NW/4 NE/4, NE/4 NW/4, E/2 SW/4, & W/2 SE/4

- (d) Extend the Totah-Gallup Oil Pool, to include:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM,  
SECTION 19: E/2  
SECTION 20: SW/4

ATWOOD & MALONE

LAWYERS

JEFF D. ATWOOD (1883-1960)  
ROSS L. MALONE  
CHARLES F. MALONE  
E. KIRK NEWMAN  
RUSSELL D. MANN  
PAUL A. COOTER  
BOB F. TURNER

TELEPHONE MAIN 2-5221  
ROSWELL PETROLEUM BUILDING  
ROSWELL, NEW MEXICO

May 11, 1961

Oil Conservation Commission  
Post Office Box 871  
Santa Fe, New Mexico

Re: Case No. 1669 in the matter of the hearing called  
by the Oil Conservation Commission to show cause why  
the rules and regulations in effect in the Atoka-Pennsyl-  
vanian Gas Pool, Eddy County, New Mexico, should be  
continued.

Gentlemen:

We are local counsel for Pan American Petroleum Corporation  
and as such wish to enter our appearance in the captioned case.  
Pan American will also be represented by Guy Buell, a member  
of the Texas Bar, and a company employee. The actual presen-  
tation for Pan American will be made by Mr. Buell

Very truly yours,

ATWOOD & MALONE

By: *E. Kirk Newman*

EKN:ps

cc/ Mr. Guy Buell  
Mr. J. K. Smith

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

SYMBOLS

DL=Day Letter  
NL=Night Letter  
LT=International Letter Telegram

1201

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

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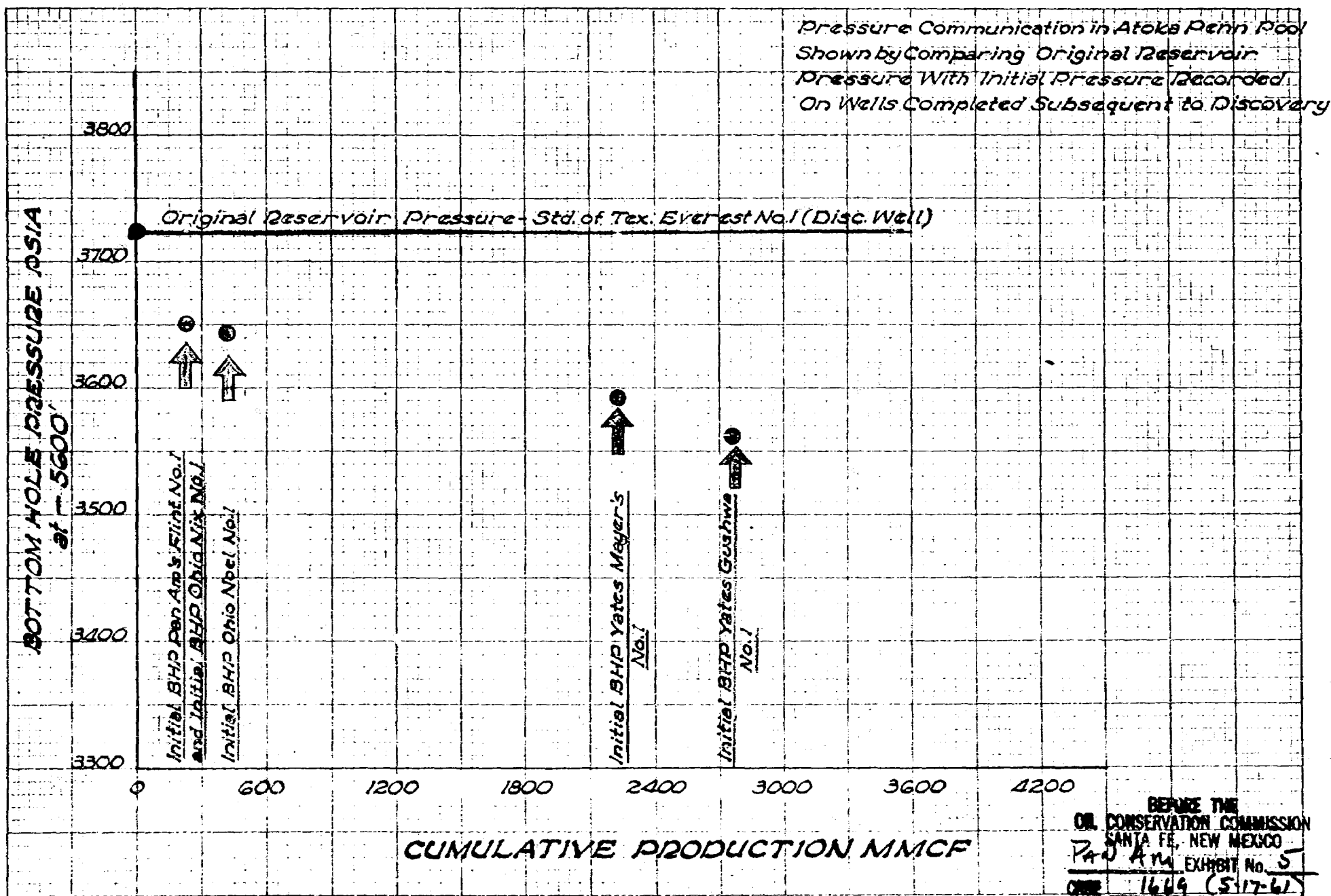
STATE OF NEW MEXICO SANTA FE NMEX=

ATTN A L PORTER JR IN REGARD TO CASE 1669 SCHEDULED  
FOR HEARING ON MAY 17 1961 GULF OIL CORP URGES THE  
COMMISSION TO CONTINUE IN EFFECT THE SPECIAL RULES AND  
REGULATIONS FOR THE ATOKA PENNSYLVANIAN GAS POOL  
EDDY COUNTY NEW MEXICO=

GULF OIL CORP W A SHELLSHEAR...

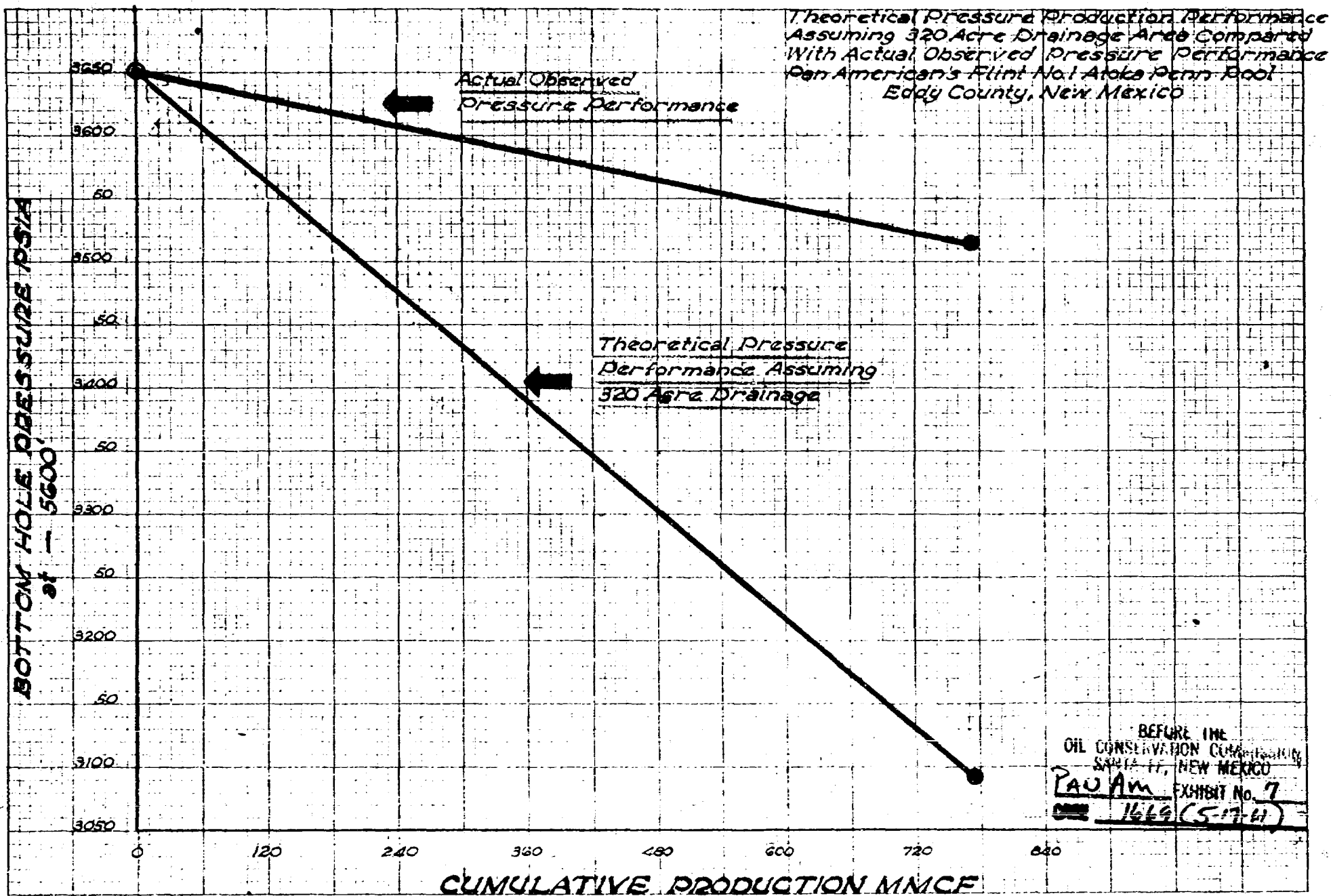
THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

KEUFFEL & ESSER CO., N. Y. NO. 350-20  
 10 x 12 1/2 inch.  
 MADE IN U. S. A.



BEFORE THE  
 OIL CONSERVATION COMMISSION  
 SANTA FE, NEW MEXICO  
 PROD. AND EXHIBIT No. 5  
 CASE 1649 (5-17-61)

KEUFFEL & ESSER CO., N. Y. NO. 357-BV  
10 x 12 in. Grid  
MADE IN U. S. A.



BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
May 17, 1961

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IN THE MATTER OF: )

The hearing called by the Oil Conserva- )  
tion Commission to permit Pan American )  
Petroleum Corporation and all other in- )  
terested parties to appear and show cause )  
why the special Rules and Regulations in )  
effect in the Atoka-Pennsylvanian Gas )  
Pool, Eddy County, New Mexico, should be )  
continued beyond June 1, 1961. )  
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Case 1669

TRANSCRIPT OF HEARING



BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
May 17, 1961

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission to permit Pan American Petroleum Corporation and all other interested parties to appear and show cause why the special Rules and Regulations in effect in the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, should be continued beyond June 1, 1961.

Case 1669

BEFORE: Mr. A. L. Porter,  
Mr. Murray Morgan

TRANSCRIPT OF HEARING

MR. MORRIS: In the matter of the hearing called by the Oil Conservation Commission to permit Pan American Petroleum Corporation and all other interested parties to appear and show cause why the special Rules and Regulations in effect in the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, should be continued beyond June 1, 1961.

MR. PORTER: Mr. Buell.

MR. BUELL: May it please the Commission, we have several large exhibits we would like to put on the board. I believe we would save time if we could have a short recess.

MR. PORTER: We will have that short recess in time.

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First, I would like to call for other appearances. I would like to have appearances in Case 1669 in regard to rules and regulations in the Atoka-Pennsylvanian Pool.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for Standard Oil Company of Texas.

MR. SETH: Oliver Seth for Ohio Oil Company and Mr. Terrell Couch.

MR. LOSEE: A. J. Losee, Losee and Stewart for Yates Petroleum Corporation and Martin Yates, III.

MR. PORTER: Mr. Anderson.

MR. ANDERSON: R. M. Anderson, Sinclair Oil and Gas Company.

MR. PORTER: Anyone else? At this time we'll take a short break while Mr. Buell posts his exhibits.

(Whereupon, a short recess was taken.)

(Whereupon, Pan American's Exhibits 1 through 7 were marked for identification.)

MR. PORTER: The hearing will come to order. We will proceed with Case 1669, Mr. Buell.

MR. BUELL: May it please the Commission, we have one witness, Mr. Smith, who has not been sworn.

MR. PORTER: Would you have your witness come forward, please, and be sworn.

(Witness sworn.)



MR. BUELL: While the witness is making his way up to the stand, I might briefly review the background on the case. It was first heard in May, 1959 at the regular hearing on the application of Pan American for temporary pool rules. As a result of that hearing the Commission issued Order R-1417, which adopted for a period of one year, in essence, 320-acre spacing units and the spacing regulation.

The Commission also, in that order, called the hearing again for the regular hearing in May of 1960. At that time the operators in this pool had the report to the Commission that the conditions were essentially the same, there had been no production from the pool, and we recommended that the temporary pools be continued for another year.

The Commission then issued Order R-1417 A, which continued the pool rules in effect, for one more year, and set the hearing that we're at today. We're happy to report that we believe we now have sufficient data to amply justify permanent rules for this pool.

BILLY J. SMITH

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Smith, would you state your full name, by whom

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you are employed and in what capacity and at what location, please?

A Billy J. Smith. I'm employed with Pan American Petroleum Corporation as a petroleum engineer in Lubbock, Texas.

Q Now, Mr. Smith, you testified at prior Commission hearings and your qualifications as a petroleum engineer are a matter of public record, are they not?

A That's correct.

MR. PORTER: The witness' qualifications are acceptable.

Q At this time, Mr. Smith, let me ask you to state what you will recommend in the way of permanent pool rules so that the Commissioners and the Staff can follow your exhibits and testimony in the light of your recommendation.

A I recommended that the temporary rules for the Atoka-Pennsylvanian Pool be adopted as permanent rules.

Q All right, Mr. Smith, I will ask you now to step over to what has been marked as Pan American's Exhibit No. 1 and briefly state what that exhibit reflects, please.

A Exhibit No. 1 is a map of the general area in the vicinity of the Atoka-Pennsylvanian Field. The Atoka-Pennsylvanian wells are shown as yellow dots. There are eleven Atoka-Pennsylvanian wells to date in the field. The unsuccessful tests are shown as gray dots. There are four of those.

Q Excuse me for interrupting, Mr. Smith, but what

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do you mean by unsuccessful tests?

A The data from these wells indicate that they are capable of producing gas, however, not in commercial quantities.

Q So you distinguished them in that manner from the literal word of dry hole?

A That is true.

Q In that they did give up some gas from the Atoka formation?

A In most cases they did or indicated they would be productive.

Q Go right ahead with your explanation.

A There's one drilling well currently, Pan American Lee No. 1, and it is shown as a yellow circle. The standard units are shown and red outlined throughout the field and they consist of either the North Half of the South Half or the West Half of the section.

Q Would you locate, for the record, the half section that the drilling well is in?

A The drilling well is in the North Half of Section 22, and this area is included in Township 18 South, Range 26 East.

Q Mr. Smith, did you state that each and every producing well in this pool, as well as the drilling well, has a standard unit assigned to it?

A That is true that they are standard units. Some of the



locations, the early locations, are not standard orthodox, but all the units are standard.

Q Go now to what has been marked as Pan American's Exhibit No. 2 and I'll ask you to speak just a little louder, if you can. Your back is to most of us here. What does Exhibit 2 reflect?

A Exhibit 2 is a map of the area. It shows the Atoka-Pennsylvanian structure. It is a monoclinial structure trending to the Northeast and Southwest. The contour interval is fifty feet.

Q Have you continued the same color code on to this exhibit in that the producing wells are shown in yellow, the drilling well with a yellow circle, and the unsuccessful Pennsylvanian tests in gray.

A That is true, the same color code is used.

Q What is the significance, Mr. Smith, of the red line I see connecting four wells on Exhibit 2?

A The red line is a trace of a cross section through the southern portion of the field connecting four wells.

Q Mr. Smith, why did you design your cross section through this portion of the field?

A In previous hearings we have presented other cross sections through the field and this cross section shows some new wells in the southern portion of the field.

Q Go now to what has been marked Pan American's Exhibit

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No. 3. Is that the cross section, the trace of which you were just discussing?

A Exhibit 3 is the cross section showing a trace here, it goes from AA<sup>1</sup> from Ohio Mix No. 1 through the field to Pan American's Flint No. 1.

Q Briefly describe what is reflected on Exhibit 3.

A Exhibit 3 is the four wells shown in Exhibit 2 that the Atoka-Pennsylvanian pay zone is colored in yellow through the cross section.

Q Mr. Smith, do you have any trouble correlating the Atoka-Pennsylvanian pay, not only on the logs on this exhibit, but throughout the field?

A The pay zone is fairly easy to correlate throughout the field, and it can be depicted with ease on the logs.

Q In your opinion is this reservoir a uniform and continuous reservoir?

A The reservoir is uniform, it is the blanket type formation lain down uniformly over the area.

Q Based on your subsurface evaluation of this reservoir, did you run across any structural impediments to the free flow of communication within the reservoir?

A No, as reflected in the structure map, and also shown on the cross section, that it is uniform and there's no such impediments.



Q So, structurally then, we certainly have the continuity for communication and effective drainage over large areas?

A That is true.

Q While we're talking about this reservoir, Mr. Smith, let me ask you this, have any cores been taken of the Pennsylvanian pay in this field?

A There have been several cores, there are three large core analyses that have been obtained in the field.

Q What do they reflect with respect to rock characteristics?

A The average porosity of the field core analysis was 12.5%, and the average permeability, 338 millidarcies.

Q Do you recall what the estimated water saturation was?

A The calculations from logs indicate that the water saturation is in the range of 18%.

Q Go now to what has been marked as Pan American's Exhibit No. 4. What data is reflected on that exhibit?

A Exhibit No. 4 is a tabulation of production from the field. The tabulation shows the production from various wells, and, it also shows the field cumulative production at any corresponding month on the left-hand side of the exhibit. That this point corresponds to the month that is cumulative to that date. The wells is the actual production during the month shown here. The field total today is 2,777,000,000 cubic feet.

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Q By the date, I know you had to cut that exhibit off some time, what date did you have in mind?

A April 1st, when this was prepared.

Q April 1, 1960? A That's right.

Q Do you feel that any other comments are necessary on this exhibit, or is it fairly self-explanatory?

A It is self-explanatory.

Q Go now to what has been marked Pan American's Exhibits No. 5 and 6 and I ask you to look at both of them, because I feel that you'll be using them in conjunction with the other. What do you have plotted on Exhibit No. 5?

A Exhibit 5 shows the pressure communication throughout the Atoka-Pennsylvanian field by comparing the original reservoir pressure with initial bottom hole pressures on subsequent wells completed after discovery.

Q Exhibit 6 appears from here to simply be a face map similar to the one that you used on Exhibits 1 and 2, is that observation correct?

A That is correct.

Q You will use that exhibit in conjunction with your testimony on Exhibit 5?

A Yes, sir.

Q Go now to Exhibit 5, Mr. Smith, and discuss in detail the data you have plotted on that exhibit.



A The red dot and corresponding red line is the original reservoir pressure as recorded in Standard of Texas Everest No. 1, which was the discovery well. This pressure was at a minus 5600, datum was 3722 psi.

Q Would you locate that discovery well on your Exhibit 6 so we can see geographically where it lies in the field?

A The red code is followed over here. The well is in the Southwest Quarter of Section 14.

Q Do you use this same color code for other wells, the pressure you plotted on Exhibit 5?

A Yes, all the exhibits have the same color code, that's right.

Q So you can look at the color pressure point and go to the map and that's that well?

A That's right.

Q Now, that takes care of the original or discovery pressure. When we speak of initial pressures on subsequently completed wells, what do we mean?

A That is the initial bottom hole pressure that's recorded on completion of the well before the well is put on production.

Q Now, what point on your Exhibit 5 represents the first pressure point of a subsequently completed well?

A The blue dot represents the initial bottom hole pressure

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on Pan American's Flint No. 1, and also Ohio Nix No. 1.

These two pressures were reported at the same cumulative production from the field.

Q You are plotting these against cumulative production?

A That is correct. It's a bottom hole pressure from the cumulative production from the field.

Q What had been the cumulative production from the field when the pressure on Flint No. 1 and Ohio Nix No. 1 were taken?

A 225,000,000 cubic feet.

Q What was the pressure on those two wells?

A The pressure on these two wells was 3650 psia.

Q How much below the virgin or discovery pressure is that?

A That's 72 psi.

Q Would you locate on Exhibit 6 the geographical location of those two wells, please?

A Pan American's Flint No. 1 is located in the Southeast Quarter of Section 22 and Ohio Nix is located in the Southeast Quarter of Section 29.

Q While you have your pointer there pointing at Ohio Nix well, approximately how far was it from the nearest producing well at the time that initial pressure was taken?

A The Nix, the nearest production at the time this initial pressure was taken, was Standard of Texas Martin No. 1 approximately 14,000 feet to the Northeast.



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Q Go now to the Flint well and, at the time the initial pressure was run on that well, how far away was the nearest producing well at that time?

A The nearest producing well to Pan American's Flint No. 1 was also the Martin well and it is 4900 feet to the north.

Q Go now to your next pressure point on Exhibit 5. I can't pick out that color from here, what color is that?

A That's orange. The orange dot.

Q Go ahead.

A It is the initial bottom hole pressure on Ohio's Noel No. 1. The pressure point was 3644 psi.

Q How much is that below the discovery pressure?

A 78 psi below the original pressure.

Q Would you locate that well on Exhibit 6 so we can see about where it lies?

A The Noel is located in the Southeast Quarter of Section 20.

Q How far was the nearest producing well to it at the time that initial pressure was taken?

A The nearest producing well was Ohio's Arnquist No. 1, 3800 feet to the Southwest.

Q Now, all of these distances we have been referring to, Mr. Smith, they show drainage far in excess of 320 acres, is that right?



A That is correct.

Q Go now to your next pressure point on Exhibit 5.

A The next pressure point is colored in brown. It's the initial bottom hole pressure on Yates Meyer No. 1. The pressure at a cumulative of 2,230,000,000 cubic feet was 3592 psi.

Q How much is that below original?

A That is 130 psi below the original pressure.

Q Would you locate that well on your Exhibit 6?

A It is located in the Northwest Quarter of 28.

Q How far was the nearest producing well to that well at the time that initial pressure was taken?

A The nearest producing well was Ohio's Noel and was 2700 feet to the west.

Q Mr. Smith, we have been talking about effective communication being reflected by the fact that the initial pressure prior to any production on the subsequent wells was considerably lower than discovery. Assuming the converse of that, say we didn't have effective pressure communication, what would you have expected these initial pressures on these subsequent wells to have been, assuming no effective communication?

A If you had no effective communication between the wells, the subsequent completions, after discovery, would have approximately the same bottom hole pressure as the discovery.

Q To you, as a reservoir engineer, the actual physical

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fact that they came in much lower than discovery, can that mean anything to you other than effective pressure communication?

A That is true that the withdrawals of fluid from the reservoir resulted in their decreased pressures.

Q Go now to the next point on your Exhibit 5, what well is that reflected by?

A The last point is the initial bottom hole pressure on Yates Gushwa No. 1. The initial pressure on that well was 3561 psi at a cumulative of 2,757,000,000 cubic feet.

Q What color is that?

A That is green.

Q How much lower than original pressure was that initial pressure?

A The Gushwa pressure was 161 psi below the original pressure.

Q Would you now locate that well on Exhibit 6?

A The Gushwa is located in the Southeast Quarter of Section 21.

Q I notice you have a red circle around that well, it appears to be in the center of that circle. Mr. Smith, what does that indicate?

A The red outline is a circle that contains 320 acres.

Q Why did you draw a circle around this well and you didn't draw any around any of the other wells?

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A This particular well was closer to an offsetting well than any other wells. The others were greatly in excess of this. The nearest to the Gushwa is Olsen Townsite. It is located about 2100 feet away, which would be a radius of a circle 320-acre drainage.

Q The nearest producing well was so located that it showed exactly, I shouldn't say exactly, I should say a minimum drainage acre of 320?

A That is true that the nearest well that could have drained 320 that had communication with this well was the Dayton Townsite well. However, at this time, that the Dayton well has not produced appreciable quantities of gas, that's in the range of 30 to 40 mile.

Q Would you suspect, then, that some of the interchanges experienced in the Gurbwa well was caused by wells even further than 2100 feet away?

A That is very likely since the other wells have produced appreciably more gas than the Dayton well.

Q But all of your data reflected on Exhibits 5 and 6 show that a well in this pool will effectively drain in excess of 320?

A That is true, that the data conclusively shows that it will drain greatly in excess of 320 acres.

Q Go now to what has been marked as Pan American's



Exhibit No. 7. What is that exhibit and what does it reflect?

A Exhibit No. 7 shows the theoretical pressure performance, Pan American's Flint No. 1, assuming a 320 acre drainage as compared to the actual observed pressure performance.

Q What do you mean by theoretical predicted performance, assuming drainage of only 320 acres?

A By knowing the reservoirs under the 320-acre tract that you can calculate the pressure at any volume of withdrawal.

Q You plotted these curves against cumulative?

A That's correct.

Q You mean you reservoir engineers can ascertain the reservoirs under 320 acres around our Flint No. 1, and, ascertaining those reservoirs, you can predict the performance at any given cumulative given production figure, assuming that that well is draining only that 320 acres?

A That is correct.

Q What color is the curve that represents that predicted performance?

A The theoretical pressure performance is shown in green and is the lower curve on the exhibit.

Q How have you shown the actual observed performance we gathered on this well?

A The actual observed performance is shown in red and is the upper curve.

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Q Let's compare the end points of the two curves. At what cumulative figure was your most recent pressure on the Flint No. 1?

A The latest pressure survey on the Flint was taken with a cumulative production from the well of 772,000,000 cubic feet.

Q Let's look at the actual observed performance, what pressure was obtained on that well at that cumulative production?

A The actual observed was 3514 psia after the cumulative of 772,000,000.

Q Let's compare that pressure with what you have predicted the pressure to be, assuming the Flint well was only draining 320 acres.

A By assuming that the well is draining only 320 acres, the calculated bottom hole pressure was 3,092 psia.

Q At the same cumulative?

A At the same cumulative.

Q How much higher was actual observed pressure?

A The actual observed pressure was 558 psia above the calculated pressure.

Q As a reservoir engineer, what conclusion do you draw from that?

A That the data shows that this well is certainly draining at the present time greatly in excess of 320 acres.

Q Do you know, based on these data, actually what that



well was draining at the time these data were gathered?

A The theoretical calculations show that it will drain in excess of 700 acres.

Q Now, in calculating the reserves under 320 acres around our Flint No. 1, what method did you use, Mr. Smith?

A Just a straight pore volume calculation.

Q Do you feel that is a realistic method of ascertaining reserves?

A Yes, sir, it is.

Q Usually it's on the high side, isn't it, when you later compare it with the present completion?

A In most cases it is an optimistic view, but it's a practical way and useful way of obtaining reserves.

Q I wonder, has a recent field-wide survey of pressures been taken?

A There was a cooperative bottom hole pressure survey taken the first part of this year in February, March and April on seven of the wells in the field.

Q Have you tabulated that in exhibit form, Mr. Smith?

A I have a rough draft only that I have tabulated in on.

Q Let me have that. Do you have a pen or pencil?

A Yes.

Q Let's take Exhibit 6 and I'll call these off and will you write as legible as you can, I will also give the date, but

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you don't need to put that on the map. Would you locate the Standard of Texas Everest well?

A The Standard of Texas Everest No. 1 is located in the Southwest Quarter of Section 14.

Q On April 4th, 1961, a pressure was taken on that well of 3573. Would you jump now over to the Standard of Texas Martin well and on March 22, 1961, a pressure of 3591 --

A Was taken on that well.

Q Drop down now to Pan American's Flint, on March 21, 1961, a pressure was taken on that well of 3514. Now, on over to the Ohio Nix No. 1, and on March 15, 1961 a pressure was taken on that well of 3544. Now, jump up to Ohio's Noel Well No. 1, and on March 15, 1961 a pressure of 3,591. On the Yates Gushwa, No. 1, the initial pressure on that well taken on April 28, 1961 was 3561.

Now, go to the Yates Meyer No. 1 Well and the initial pressure on that well on February 15, 1961 was 3592.

Mr. Smith, looking at those pressures over that large geographical area, all of them taken at approximately the same time within a month or so of each other, it appears from here that the pressures are relatively uniform, would you agree with that observation?

A That is true, that the pressures over the whole area show very close agreement.

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Q It would be an extremely fortuitous occurrence, would it not, if data such as this did not indicate a very effective communication?

A That is true, especially in view of the fact that some of the wells have produced considerably greater, more gas than some of the others. The Gushwa has no production well, take these two--

Q At which point?

A At the time the pressure was taken. It has a bottom hole pressure of 561. The Pan American Flint No. 1 has a bottom hole pressure of 3419 after 772,000,000 feet of gas was produced, and the close agreement shows that it is in very good communication.

Q As I recall, in your testimony, I believe you said that in your opinion a well in this reservoir will effectively, efficiently and economically drain in excess of 320 acres. Is my recollection correct?

A That is correct. We have shown by three methods that I will summarize very quickly, that there's very good communication, and that the wells can drain in excess of 320 acres. I call your attention to Exhibit No. 5, it shows the pressure communication by comparing the original pressure with subsequent initial bottom hole pressure after the discovery well.

In Exhibit 7 we show the theoretical pressure performance on the Pan American Flint No. 1 as compared to the actual

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observed performance. This, again, shows very good communication.

In Exhibit 6, the very close agreement with the bottom hole pressures after considerable gas had been produced. These exhibits conclusively prove that the reservoir is in very good communication.

Q In your opinion, as a reservoir engineer, Mr. Smith, if this pool is developed on any greater density than 320 acres, would it be through the drilling and completion of many unnecessary wells?

A Yes, sir, anything less than 320 acres would certainly result in drilling quite a number of unnecessary wells and result in a considerable expense.

Q Certainly, then, your recommended unit size of 320 acres would prevent waste?

A It certainly would.

Q Now, looking at the other side of the coin, do you feel that your recommended rules for this pool will protect the correlative rights of all owners of interest?

A The good communication that it would, that it would protect the correlative rights.

Q Do you have anything further you would like to add at this time, Mr. Smith?

A That's everything.

MR. BUELL: May it please the Commission, that's all

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the direct we have. I might formally offer at this time Pan American's Exhibits 1 through 7 inclusive.

MR. PORTER: Without objection, Pan American's Exhibits 1 through 7 will be admitted to the record. Any questions of the witness?

MR. MORRIS: Yes.

MR. PORTER: Mr. Morris.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Smith, you have recommended that the temporary rules that are in effect in the Atoka-Pennsylvanian Gas Pool at the present time be made permanent, is that correct?

A That is correct.

Q That includes a provision for what we call a rigid pattern, meaning that the wells would have to be completed in either the Northwest Quarter or the Southeast Quarter of the section?

A That is true.

Q In looking at your Exhibit No. 1, I note only two wells, unless I have overlooked some, that are off pattern. One was drilled before June the 5th, 1959 and the other, the Olsen Dayton Townsite Well, for which an unorthodox location has been approved by the Commission. Do you concur with my observations?

A That is correct.

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Q Why are you recommending a fixed pattern rather than a flexible pattern in this pool?

A We feel that the fixed pattern would adequately result in development of the field. Of course, the rules provide for exceptions, and that is the rule is written that the field will essentially be developed on a uniform pattern.

Q Do you feel that development along the edge of the pool, let's say, particularly toward the northwest or the southeast, would be impeded by adherence to the rigid pattern?

A Of course, you are getting out in the area of questionable production when you get into the extreme part in either direction, and this direction does not control, it's wide open. I feel that development on the standard locations would not impede development of the field, if necessary that there can be exception and drilled unorthodox locations.

Q Do you feel that the Commission should be liberal in granting exceptions to the location requirement of the rule?

A Only if the data justifies the exception.

MR. MORRIS: Thank you, Mr. Smith, I have no further questions.

MR. PORTER: Mr. Nutter.

BY MR. NUTTER:

Q Mr. Smith, do you have initial pressures for the wells which you didn't give initial pressures for?

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A Those were the only wells that had initial pressures. There were some other pressures available, however, they were taken after the wells produced certain quantities of gas.

Q Ohio didn't take an initial bottom hole pressure on their Arnquist well?

A It was not available to us.

Q Did Olsen take an initial bottom hole pressure on the Dayton Townsite well?

A No, sir, it's my understanding that he did not.

Q I presume there wasn't any available on Pan American's Martin No. 1 well?

A There was no initial bottom hole pressure available on the Martin.

Q And Pan American didn't take an initial bottom hole pressure on its Martin well?

A We did take an initial pressure on Pan American's Martin No. 1. However, it was not considered reliable. It was greatly below the other pressures and it was not considered a reliable pressure.

Q How about the well in the Northwest of Section 27, is that a gas well in that pool?

A I believe it's Nearburg and Ingrams Lee Well, possibly, in the Northwest of 27.

Q Yes.

A Yes, that is their Hawkins No. 2.

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Q Was there any bottom hole pressure available on completion of that well?

A No, sir, there was not available to us.

Q Have you plotted the only bottom hole pressures that were available to you on your Exhibit No. 5?

A With the exception of the Martin, as pointed out earlier, that the pressure was not considered reliable at all, but these are the initial bottom hole pressures on the field that were available.

Q The pressure on Pan American's Martin well wouldn't have fitted on the general curve that's drawn from the red point on Exhibit 5 down to the green point on the Gushwa well, is that correct? It would have been below that line?

A As well as I remember, the pressure was in the range of 3500 in the earlier stage of depletion, and it was not considered reliable.

Q What basis did you use for drawing the red line on this other exhibit? I don't know what the number of it is.

A The red line is actually, we observed a pressure at a cumulative of 772,000,000 cubic feet, a bottom hole pressure was taken on the well at that time.

MR. BUELL: Identify the exhibit, Mr. Smith.

A Exhibit 7. The red line connects the initial bottom hole pressure on the Flint to the observed pressure at the

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later date.

Q What data did you use for drawing the green line?

A The green line is theoretical calculation, taking a pore volume reserve in the 320 acres and calculating the pressure at a cumulative of 772,000,000 cubic feet.

Q This data that you gave on the cores that were available was used in making that computation?

A That is correct.

Q Which wells were the wells that were cored, Mr. Smith?

A The cores that I had available to me were the, had a core analysis on Yates Gushwa, on Olsen Dayton Townsite, and on the Everest well. That is the Standard of Texas Everest well.

Q What thickness did you use for the sand on your Flint No. 1?

A Twenty feet.

Q Did you use the 12½% porosity that you mentioned earlier?

A Yes, sir.

Q And 18% water saturation?

A Yes, sir.

Q Now, the 20 feet, I presume, was taken from your log and used in correlation with the logs which were available on the cored wells?

A That is correct.

MR. NUTTER: I believe that's all, thank you.

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MR. PORTER: Mr. Utz.

BY MR. UTZ:

Q What pressure did you use for your pore volume calculation?

A Well, actually calculated the pressure, took the initial pressure and then calculated the second pressure at a cumulative of 772,000,000 cubic feet with the pore volume formula.

Q Do you recall your reserve per acre?

A In this study, why calculate a recovery per acre that actually with this calculation that you calculate your recovery over a certain pressure period, a pressure completion period. So, this is the recovery, the pressure at a recovery of 772,000,000 cubic feet.

Q You didn't come up with an accurate pore volume reserve?

A Not down to abandonment pressure, no, sir.

Q What datum, in reference to your pressures on Exhibit 5, what datum did you use?

A All of the datums are minus 5600 feet.

MR. UTZ: That's all I have, thank you.

MR. PORTER: Mr. Nutter.

BY MR. NUTTER:

Q Mr. Smith, did you have bottom hole pressures maybe on drill stem tests on the non-productive wells which are shown as dry holes on the exhibit?

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A The pressures, I did not use those on the dry holes, no.

Q How much gas did these gray wells make on this exhibit?

A They varied, if I recall correctly, that the Cary well, I believe, flowed around 200 MCF per day, in that range. I believe the Nix-Curtis in the Northwest Quarter of Section 32 had a flow rate around 300.

Q And you don't know the pressures?

A No, I don't know the pressures on those.

MR. NUTTER: Thank you.

MR. PORTER: Does anyone else have a question of Mr. Smith? He may be excused.

(Witness excused.)

MR. PORTER: Does this conclude Pan American's testimony?

MR. BUELL: We have no other witness.

MR. PORTER: Does anyone else desire to present testimony in this case? I'll call for statements at this time. Does anyone have a statement to make in the case? Mr. Kellahin.

MR. KELLAHIN: Jason Kellahin for Standard of Texas. Standard of Texas concurs with the recommendations which have been made by Pan American and recommends that the order of the Atoka-Pennsylvanian Pool be made permanent with 320-acre spacing units. Standard feels that the evidence amply justifies 320-acre spacing pattern and clearly shows that one well will drain

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not only 320 acres but quite a bit in excess of that amount, and that another well on the same unit would result in waste.

MR. PORTER: Mr. Gordon.

MR. GORDON: J. C. Gordon, Socony Mobil. Socony Mobil, as an interest owner in the field, concurs with the recommendation made by Pan American Petroleum Corporation for permanent 320-acre spacing units in the Atoka-Pennsylvanian Field.

MR. PORTER: Mr. Losee.

MR. LOSEE: Yates Petroleum and Martin Yates, III, are the owners of working interests in five wells, and Martin has a riding or overriding in eight other wells in the Atoka-Pennsylvanian.

In this pool Yates feels that each well will satisfactorily drain at least 320 acres, that any spacing pattern less than 320 is uneconomical from the operator's standpoint, and is unnecessary to protect the correlative rights of any other interest parties.

We recommend that the Commission make permanent its temporary order for 320-acre spacing.

MR. COUCH: The Ohio believes that the evidence and testimony presented by Pan American very definitely establishes that wells in this pool will drain in excess of 320 acres, and that the drilling of additional wells, drilling the pool to an additional density, would be the drilling of very unnecessary

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wells. We definitely recommend and join with the Pan American, that the existing order be made permanent.

MR. PORTER: Mr. Anderson.

MR. ANDERSON: R. M. Anderson, Sinclair Oil and Gas Company. We wish to concur with Pan American in their recommendations here today.

MR. PORTER: Anyone else have a statement to make in the case?

MR. MORRIS: Mr. Commissioner, we have a telegram from Gulf Oil Corporation urging the Commission to continue in effect the special rules and regulations for the Atoka-Pennsylvanian Gas Pool.

MR. PORTER: If nothing further to be offered in the Case 1669, the Commission will take it under advisement and take up next Case 2276.

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ALBUQUERQUE, NEW MEXICO



STATE OF NEW MEXICO )  
:  
COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 22nd day of May, 1961.

Ada Dearnley  
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691



OIL CONSERVATION COMMISSION  
P. O. BOX 871  
SANTA FE, NEW MEXICO

May 25, 1960

Mr. Kirk Newman  
Atwood & Malone  
P. O. Box 867  
Roswell, New Mexico

Dear Mr. Newman:

On behalf of your client, Pan American Petroleum Corporation, we enclose a copy of Order R-1417-A in Case 1669 issued by the Oil Conservation Commission this date.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

lr/

Carbon copy of Order R-1417-A sent to:

Mr. Guy Buell  
Box 1410 - Ft. Worth, Texas

Mr. Terrell Couch  
Ohio Oil Company  
P. O. Box 3128  
Houston 1, Texas

Oil Conservation Commission:  
Hobbs and Artesia, N. Mex.

Mr. Jason Kellahin  
Santa Fe, New Mexico

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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. 1669  
Order No. R-1417

APPLICATION OF PAN AMERICAN  
PETROLEUM CORPORATION FOR AN  
ORDER PROMULGATING TEMPORARY  
SPECIAL RULES AND REGULATIONS  
FOR THE ATOKA-PENNSYLVANIAN  
GAS POOL, EDDY COUNTY, NEW  
MEXICO, TO PROVIDE FOR 320-ACRE  
SPACING.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 13, 1959, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 5th day of June, 1959, 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, Pan American Petroleum Corporation, proposes the establishment of temporary 320-acre gas well spacing in the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico.
- (3) That at the present time there is no market for gas from said Atoka-Pennsylvanian Gas Pool and thus no production data.
- (4) That there will be no market for the gas from said Atoka-Pennsylvanian Gas Pool until a substantial number of wells are drilled.
- (5) That there is a reasonable probability that it will not be economical to drill gas wells on a 160-acre spacing pattern in said Atoka-Pennsylvanian Gas Pool; accordingly, said pool should be spaced on a 320-acre pattern, at least until such time as a market for the gas is available and production data obtained.

Case No. 1669  
Order No. R-1417

(6) In view of the above findings, the establishment of 320-acre spacing in the Atoka-Pennsylvanian Gas Pool on a temporary basis is justified.

(7) That the 320-acre units should comprise any two contiguous quarter sections of a single governmental section.

(8) That each well completed or recompleted in the Atoka-Pennsylvanian Gas Pool should be located in the Northwest quarter or the Southeast quarter of the section and should be located no nearer than 990 feet to the outer boundary of the quarter section nor nearer than 330 feet to any governmental quarter-quarter section line; provided, however, that the Secretary-Director should have authority to grant exceptions to the foregoing well location requirements.

(9) That this case should be heard again by the Commission at the regular monthly hearing in May of 1960 to permit the applicant and all other interested parties to appear and show cause why 320-acre spacing in the Atoka-Pennsylvanian Gas Pool should be continued in effect.

IT IS THEREFORE ORDERED:

(1) That temporary special rules and regulations for the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, be and the same are hereby promulgated as hereinafter set forth.

(2) That any well which was projected to or completed in the Atoka-Pennsylvanian Gas Pool prior to the effective date of this order be and the same is hereby granted an exception to Rule 3 (a) of the special rules and regulations set forth below.

(3) That the temporary special rules and regulations hereinafter set forth shall be of no further force and effect after June 1, 1960.

(4) That this case shall be called for hearing before the Commission at the regular monthly hearing in May, 1960, to permit the applicant and all other interested parties to appear and show cause why the special rules and regulations hereinafter set forth should be continued in effect beyond May 31, 1960.

SPECIAL RULES AND REGULATIONS FOR THE  
ATOKA-PENNSYLVANIAN GAS POOL

RULE 1. Each well completed or recompleted in the Pennsylvanian Formation within one mile of the boundary of the Atoka-Pennsylvanian Gas Pool and not nearer to nor within the boundaries of another designated Pennsylvanian gas pool, shall be drilled, spaced, and produced in accordance with the special rules and regulations hereinafter set forth.

**RULE 2. (a)** Each well completed or recompleted in the Atoka-Pennsylvanian Gas Pool shall be located on a tract consisting of approximately 320 acres comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision (half section) of the U. S. Public Lands Survey. For purposes of these rules, a unit consisting of between 316 and 324 surface contiguous acres shall be considered a standard unit.

(b) The Secretary-Director shall have authority to grant an exception to Rule 2 (a) without notice and hearing where an application has been filed in due form and where the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Lands Survey, or where the following facts exist and the following provisions are complied with:

(1) The non-standard unit consists of contiguous quarter-quarter sections or lots.

(2) The non-standard unit lies wholly within a single governmental section.

(3) The entire non-standard unit may reasonably be presumed to be productive of gas from the Atoka-Pennsylvanian Gas Pool.

(4) That the applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which any part of the non-standard unit is situated and which acreage is not included in said non-standard unit.

(5) In lieu of Paragraph 4 of this Rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if, after a period of 30 days, no such operator has entered an objection to the formation of such non-standard unit.

**RULE 3. (a)** Each well completed or recompleted in the Atoka-Pennsylvanian Gas Pool shall be located in the northwest quarter or the southeast quarter of the section and shall be located no nearer than 990 feet to the outer boundary of the quarter section nor nearer than 330 feet to any governmental quarter-quarter section line.

(b) The Secretary-Director shall have authority to grant exceptions to Rule 3 (a) without notice and hearing where an application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

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Case No. 1669

Order No. R-1417

Applicants shall furnish all offset operators and all operators within the section in which the subject well is located a copy of the application to the Commission and shall stipulate to the Commission that proper notice has been furnished to all such operators. The Secretary-Director may approve the application if, after a period of twenty days, no offset operator has entered an objection to the proposed unorthodox location.

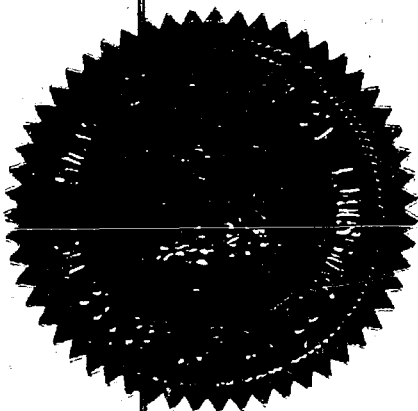
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*John Burroughs*  
JOHN BURROUGHS, Chairman

*Murray E. Morgan*  
MURRAY E. MORGAN, Member

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



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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. 1669  
Order No. R-1417-A

APPLICATION OF PAN AMERICAN PETROLEUM  
CORPORATION FOR AN ORDER PROMULGATING  
TEMPORARY SPECIAL RULES AND REGULATIONS  
FOR THE ATOKA-PENNSYLVANIAN GAS POOL,  
EDDY COUNTY, NEW MEXICO, TO PROVIDE  
FOR 320-ACRE SPACING.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 18, 1960, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 25th day of May, 1960, 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, Pan American Petroleum Corporation, seeks an order continuing the temporary Special Rules and Regulations governing the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, in effect until June 1, 1961.
- (3) That the conditions existing in the said Atoka-Pennsylvanian Gas Pool at the present time are substantially the same as were the conditions when Order No. R-1417 was entered, and that such temporary Rules and Regulations should, therefore, be continued in effect until June 1, 1961.
- (4) That this case should be heard again by the Commission at its regular monthly hearing in May, 1961, to permit the applicant and all other interested parties to appear and show cause why 320-acre spacing in the Atoka-Pennsylvanian Gas Pool should be continued in effect.
- (5) That the testimony presented establishes that the said Atoka-Pennsylvanian Gas Pool should be extended to include certain additional acreage.

-2-

CASE No. 1669  
Order No. R-1417-A

IT IS THEREFORE ORDERED:

(1) That the temporary Special Rules and Regulations now in effect in the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, as promulgated by Order No. R-1417, be and the same are hereby continued in effect until June 1, 1961.

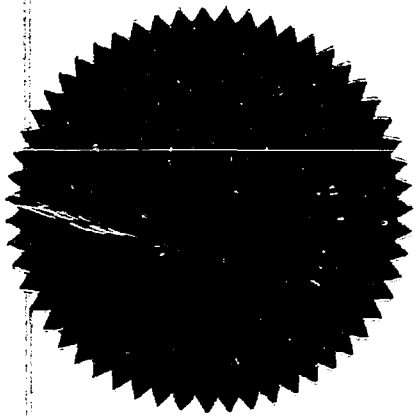
(2) That this case shall be called for hearing before the Commission at its regular monthly hearing in May, 1961, to permit the applicant and all other interested parties to appear and show cause why the Special Rules and Regulations in effect in the Atoka-Pennsylvanian Gas Pool should be continued beyond June 1, 1961.

(3) That the horizontal limits of the Atoka-Pennsylvanian Gas Pool, be and the same are hereby extended to include the following acreage:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM  
Section 28: N/2  
Section 29: All

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
*John Burroughs*  
JOHN BURROUGHS, Chairman

*Murray E. Morgan*  
MURRAY E. MORGAN, Member

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

esr/

# PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING

FORT WORTH, TEXAS

ALEX CLARKE, JR.  
DIVISION ENGINEER

March 25, 1959

File: GWK-4002-986.510.1

Subject: Request for Hearing  
Atoka Pennsylvanian Gas Pool  
Eddy County, New Mexico

New Mexico Oil Conservation Commission  
Capitol Annex Building  
Santa Fe, New Mexico

*may regular*

Gentlemen:

It is respectfully requested that a hearing be docketed at the next regular Commission hearing to consider the application of Pan American Petroleum Corporation for adoption of temporary 320 acre spacing rules for the Atoka Pennsylvanian Gas Pool of Eddy County, New Mexico. Well locations to be requested at this hearing will be 990' from the outer boundary of either the northwest or southeast quarter of a regular governmental section, subject to a variation of 200' for topographic conditions.

Very truly yours,

*Alex Clarke, Jr.*

RVC:lj

*Docketed  
Mailed  
5-4-60  
Jr*  
*Docketed  
Mailed  
5-11-59  
Jr*

NMOCC Exhibit No. 1  
Case No. 1969

Recommendations for the nomenclature case for Northwest New Mexico for the May hearing, 1960.

- (a) Extend the Aztec-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 11 WEST, NMPM  
Section 1: W/2 & SE/4  
Section 12: NE/4

based on:

Aztec Oil & Gas #9 Nye  
D-1-30N-11W  
AOF 649 MCFPD; SICP 696/7 days

Aztec Oil & Gas #8 Nye  
P-1-30N-11W  
AOF 1316 MCFPD; SICP 714/7 days.

- (b) Extend the Blanco-Mesaverde Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM  
Section 6: All

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM  
Section 31: All  
Section 32: All

based on:

EPNG #150 Rincon Unit  
A-6-26N-6W  
1010 MCFPD

EPNG #130 Rincon Unit  
A-32-27N-6W  
AOF 920 MCFPD; SICP 1066/9 days

- (c) Extend the Escrito-Gallup Oil Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 24 NORTH, RANGE 7 WEST, NMPM  
Section 16: S/2 SW/4  
Section 17: S/2-SE/4

based on:

Compass Exploration #1-16 State  
M-16-24N-7W  
IP 480 BOPD

Dorfman Production #1 Judy-Federal  
P-17-24N-7W  
IP 552 BOPD

- (d) Extend the Horseshoe-Gallup Oil Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM  
Section 21: SE/4 SE/4  
Section 27: NW/4 NW/4  
Section 28: NW/4 NE/4

TOWNSHIP 31 NORTH, RANGE 17 WEST, NMPM  
Section 13: NE/4 SW/4

based on:



Texaco #1 Ute Mtn. Tribe "B"  
P-21-31N-16W  
IP 25 BOPD

EPNG Products #38 Horseshoe Ute  
D-27-31N-16W  
IP 26 BOPD

EPNG Products #39 Horseshoe Ute  
B-28-31N-16W  
IP 24 BOPD

Mobil Oil #21 Navajo "A"  
K-13-31N-17W  
IP 62 BOPD

- (e) Extend the Puerto Chiquito-Gallup Oil Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 1 EAST, NMPM

Section 4: SW/4  
Section 5: SE/4  
Section 9: W/2 & SE/4  
Section 16: NE/4

based on:

Intex Oil #1 USL Bajo  
F-9-26N-1E  
IP 130 BOPD

Intex Oil #1 USL Casa  
H-16-26N-1E  
IP 41 BOPD

- (f) Extend the Totah-Gallup Oil Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM

Section 33: SE/4  
Section 35: N/2

based on:

Southwest Production #1 Callow Federal  
L-33-29N-13W  
IP 193 BOPD

Pan American #86 Gallegos Canyon Unit  
H-35-29N-13W  
IP 37 BOPD

- (g) Extend the Verde-Gallup Oil Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 15 WEST, NMPM  
Section 6: W/2

TOWNSHIP 30 NORTH, RANGE 16 WEST, NMPM  
Section 1: N/2 & E/2 SE/4  
Section 2: NE/4 NE/4

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM  
Section 22: N/2 SW/4  
Section 29: SW/4  
Section 30: NW/4 SW/4

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM  
Section 36: SW/4 SW/4

based on:

Tennessee Gas Transmission #2 Na-Dzis-Pah  
B-1-3QN-15W  
IP 59 BOPD

Compass Exploration #2-1 Indian  
C-1-3QN-16W  
IP 60 BOPD

Tennessee Gas #1 Na-Dzis-Pah  
G-1-3QN-16W  
IP 15 BOPD

Compass Exploration #1-1 Indian  
F-1-3QN-16W  
IP 2400 BOPD

Standard of Texas #1 Navajo 80-1  
P-1-3QN-16W  
IP 63 BOPD

EPNG Products #1 Navajo-Lowe  
A-2-3QN-16W  
IP 136 BOPD

Mobil Oil #10 Ute Mountain  
K-22-31N-14W  
IP 10 BOPD

Standard of Texas #1 Ute Mountain 2-29  
D-29-31N-14W  
IP 101 BOPD

Standard of Texas #3 Ute Mountain 2-29  
F-29-31N-14W  
IP 85 BOPD

Three States #9 Tribal  
L-30-31N-14W  
IP 74 BOPD

Atlantic Refining #1 Ute  
M-36-31N-16W  
IP 95 BOPD

(h) Extend the Angels Peak-Dakota Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM  
Section 6: W/2

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM  
Section 7: All (partial)

TOWNSHIP 28 NORTH, RANGE 11 WEST, NMPM  
Section 13: W/2  
Section 14: S/2

TOWNSHIP 29 NORTH, RANGE 11 WEST, NMPM  
Section 25: E/2  
Section 36: All

based on:

Pan American #1 Galt "J"  
N-6-27N-10W  
AOF 1312 MCFPD; SICP 1965/47 days

Aztec Oil & Gas #7 Aztec  
I-14-28N-11W  
AOF 24,145 MCFPD; SICP 2098/7 days

Tennessee Gas #1 Eaton Gas Unit "A"  
P-25-29N-11W  
AOF 6450 MCFPD; SICP 200/7 days

Pubco Petroleum #26 State  
N-36-29N-11W  
AOF 3514 MCFPD; SICP 2078/7 days

- (i) Extend the South Blanco-Dakota Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM  
Section 26: W/2

based on:

EPNG #125 Rincon Unit  
N-26-27N-6W  
AOF 3671 MCFPD; SITP 2434/9 days

- (j) Extend the West Blanco-Dakota Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 32 NORTH, RANGE 13 WEST, NMPM  
Section 25: All  
Section 26: All  
Section 36: E/2

based on:

Consolidated Oil & Gas #1 Ripley  
N-26-32N-13W  
AOF 1460 MCFPD; SITP 1814/7 days

Southern Union #1 Wright-State  
B-36-32N-13W  
AOF 910 MCFPD; SITP 1961/9 days

- (k) Extend the West Kutz-Dakota Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM  
Section 34: E/2  
Section 35: All

based on:

Aztec Oil & Gas #3 Hagood  
P-34-29N-13W  
AOF 3650 MCFPD; SITP 2043/7 days

Pan American #86 Gallegos Canyon Unit  
H-35-29N-13W  
AOF 6188 MCFPD; SITP 1955/19 days

CLASS OF SERVICE  
This is a fast message  
unless its deferred char-  
acter is indicated by the  
proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

SYMBOLS  
DL=Day Letter  
NL=Night Letter  
LT=International  
Letter Telegram

1201 (4-60)

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

LA202 SSG327

1960 MAY 13 PM 4 44

L RWA092 NL PD=ROSWELL NMEX 13=

NEW MEXICO OIL CONSERVATION COMMISSION=

PO BOX 871 SANTA FE NMEX=

RE: CASE NO. 1669 ATOKA-PENN POOL AS OPERATORS IN THE  
POOL WE CONCUR WITH PAN AMERICAN'S RECOMMENDATION FOR  
CONTINUANCE OF 320 ACRE SPACING=

NEARBURG & INGRAM TOM L INGRAM

*Neaenburg  
Ingram*

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL

1201 (4-60)

SYMBOLS

DL=Day Letter  
NL=Night Letter  
LI=International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination.

LA213 SSK400 L AYA71 1960 MAY 18 AM 8:24 1960 MAY 17 PM 4 57

(L RWA089) LONG PD=ROSWELL NMEX 17 408P MST=

NEW MEXICO OIL CONSERVATION COMMISSION=

STATE CAPITOL BLDG SANTA FE NMEX=

IN THE MATTER OF CASE 1669 TO BE HEARD ON MAY 18, 1960,  
GULF OIL CORPORATION WISHES TO SUBMIT THE FOLLOWING.

GULF DOES NOT HAVE ANY PRODUCING PROPERTIES IN THE  
ATOKA-PENNSYLVANIAN GAS POOL AT THIS TIME BUT WE BELIEVE  
THAT SEVERAL OF OUR LEASES WILL BE PRODUCTIVE FROM THIS  
POOL. WE FEEL THAT ONE WELL WILL DRAIN IN EXCESS OF 160  
ACRES AND THAT PRECAUTIONS SHOULD BE TAKEN TO PREVENT  
UNNECESSARY DRILLING. WE THEREFORE RECOMMEND THAT THE  
COMMISSION ADOPT A STANDARD 320 ACRE PRORATION UNIT OR

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

1201 (4-60)

SYMBOLS

DL=Day Letter

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LT=International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

CONTINUE THE PRESENT SPACING UNTIL PRODUCTION PERFORMANCE  
DATA ARE AVAILABLE TO DETERMINE THE EFFECTIVE DRAINAGE

AREA=

W A SHELLSHEAR==

1669 18 1960 160 320.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

May 13, 1960

RE: Order # R-1417 - Temporary Special  
Rules for Atoka - Pennsylvania Gas  
Pools

Mr. A. L. Porter, Jr., State Geologist  
P. O. Box 871  
Santa Fe, New Mexico

Dear Mr. Porter:

It has come to our attention that some of the companies are requesting the gas spacing be set at 320 acres. It is our understanding the present spacing is set at 320 acres on a temporary basis. It is our further understanding that one of the matters considered at the time this was made a temporary order was the ability of the wells to drain 320 acres after pipeline connections have been made and after some period of tests have been taken.

We the undersigned, as mineral owners in the area involved, hereby petition that this matter be seriously considered to the end that the present temporary order setting the spacing at 320 acres be continued as a temporary order and not be made permanent. The reason we request this is that after pipeline connection is available and the wells have produced a reasonable time the facts then might reveal that 160 acres would be necessary to properly drain, in which instance it would therefore be economically feasible for the various companies involved to drill on 160 acre basis. At said time if the facts revealed, from the standpoint of economics, it would be economically proper to retain the 320 acre spacing, we feel this would be the time to make the ruling permanent.

We sincerely request your serious consideration of this matter.

Yours sincerely,

*John R. Lee  
Clyde R. Justice  
Chas. R. Martin  
James R. Beard  
Velma O. Beard*

# CARPER

# DRILLING COMPANY, INC.

O I L P R O D U C T I O N A N D D R I L L I N G

EMERY CARPER, PRESIDENT  
STANLEY CARPER, EXEC. VICE-PRES. & TREAS.  
MARSHALL ROWLEY, VICE-PRES.  
FRANCES BOOKER, SECRETARY  
NELLE MILLER, ASST. TREAS.

ARTESIA, NEW MEXICO  
CARPER BUILDING  
SHERWOOD 6-2784  
SHERWOOD 6-2785

*Case  
file*

May 16, 1960

Oil Conservation Commission  
State of New Mexico  
Santa Fe, New Mexico

Attention: Mr. A. L. Porter

*Carper  
Drilling Inc.  
CO.*

Re: Case No. 1669 on May 18,  
1960 Docket.

Gentlemen:

We concur with Pan American Petroleum Corporation's application to promulgate the special rules and regulations for the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico to provide for 320 acre spacing as authorized on a temporary basis by order No. R-1417, dated June 5, 1960.

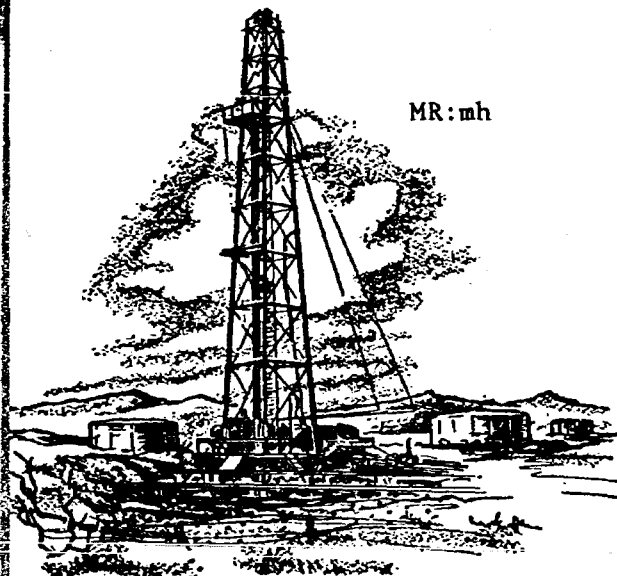
Yours very truly,

CARPER DRILLING COMPANY, INC.

*Marshall Rowley*

Marshall Rowley  
Vice President

MR:mh







# SINCLAIR OIL & GAS COMPANY

P.O. BOX 1470

MIDLAND, TEXAS

MU 1001 3-2761

May 13, 1960

R. L. ELSTON  
VICE PRES. & DIVISION MANAGER

O. G. SIMPSON  
ASSISTANT DIVISION MANAGER

C. S. TINKLER  
DIVISION EXPLORATION SUPT.

J. MEFFORD  
DIVISION PRODUCTION SUPT.

F. C. ROGERS  
DIVISION GAS & GAS PRODUCTS SUPT.

*Sinclair*  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

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

Gentlemen:

Please refer to the application of Pan American Petroleum Corporation for the promulgation of special rules for the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, Case No. 1669, scheduled for hearing May 18, 1960. It is our understanding that a gas connection has not been obtained for the wells in this field to date and that Pan American will request that the present temporary rules authorized by Order No. R-1417 dated June 5, 1959, be continued on a temporary basis for a period of one more year.

Sinclair Oil & Gas Company owns 160 acres within the productive limits of this field and joins with Pan American in requesting a one year continuance of the present temporary rules.

Yours very truly,

Joe Mefford

JM:RMA:mk

# NIX & CURTIS

302 BOOKER BUILDING

RALPH NIX

PHONE BH 6-2341

JERRY CURTIS

P. O. BOX 605  
ARTESIA, NEW MEXICO

May 13, 1960

RE: Order # R-1417 - Temporary Special  
Rules for Atoka - Pennsylvania Gas  
Pools

Mr. A. L. Porter, Jr., State Geologist  
P. O. Box 871  
Santa Fe, New Mexico

Dear Mr. Porter:

It has come to our attention that some of the companies are requesting the gas spacing be set at 320 acres. It is our understanding the present spacing is set at 320 acres on a temporary basis. It is our further understanding that one of the matters considered at the time this was made a temporary order was the ability of the wells to drain 320 acres after pipeline connections have been made and after some period of tests have been taken.

As mineral owners in the area, both leased and unleased, and as prospective participants, both as to royalty and as to working interests, we are of the opinion the present temporary order should be continued until such time as some figures are available on which to base a permanent order. It may be after a reasonable production period the facts will reveal that it is economically unsound to drill these gas wells on a smaller unit. On the other hand the facts may reveal that it is economically proper to develop on a smaller unit and we therefore feel it would not be proper at this time to make the order permanent. We further feel there has been no development in the area that would change any facts or statistics to induce the proper authorities to change any past ruling at this time and that the reasons for the temporary ruling are as sound now as they were at the time of said ruling.

Trusting this letter will receive your consideration, we remain,

Yours respectfully,

NIX & CURTIS

  
Jerry Curtis

JC/alw

DOCKET: REGULAR HEARING MAY 18, 1960

Oil Conservation Commission, 9 a.m., Mabry Hall, State Capitol, Santa Fe

- ALLOWABLE: (1) Consideration of the oil allowable for June, 1960.
- (2) Consideration of the allowable production of gas for June, 1960, for six prorated pools in Lea County, New Mexico, and also presentation of purchasers' nominations for the six-month period beginning July, 1960; consideration of the allowable production of gas for seven prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for June, 1960.

CASE 1935: In the matter concerning purchaser prorationing by Sinclair Crude Oil Company in all oil pools from which it purchases in New Mexico.

CASE 1909: (De Novo)

Application of Pan American Petroleum Corporation for a hearing de novo before the Commission in Case No. 1909, Order No. R-1628, relating to the request for a 386-acre non-standard gas unit in the Dakota Producing Interval, San Juan County, New Mexico, comprising all of partial Section 7 and the W/2 of partial Section 8, both in Township 28 North, Range 10 West.

CASE 1904: (De Novo)

Application of Sunray Mid-Continent Oil Company for a hearing de novo before the Commission in Case No. 1904, Order No. R-1636, relating to special rules governing the Central Bisti LPG-Gas-Water Injection Project in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico, particularly those provisions concerning the assignment of well allowables.

CASE 1893: (De Novo)

Application of Petro-Atlas, Inc. for a hearing de novo before the Oil Conservation Commission in Case No. 1893, Order No. R-1619, relating to a request for cancellation of the over-production charged against one gas well in the South Blanco-Pictured Cliffs Pool, San Juan County, New Mexico.

CASE 1669:

In the matter of the application of Pan American Petroleum Corporation for the promulgation of special rules and regulations for the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order promulgating special rules and regulations for the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to provide for 320-acre spacing units and for well location requirements, as authorized on a temporary basis by Order No. R-1417, dated June 5, 1959.

CASE 1967: Application of Redfern and Herd, Val R. Reese and Associates, Inc., and El Paso Natural Gas Company for the promulgation of special pool rules governing the Devils Fork-Gallup Pool, Rio Arriba County, New Mexico, including provisions relating to drilling and proration units, an allocation formula, and market demand proration for said pool.

CASE 1968: Southeastern New Mexico nomenclature case calling for an order creating new pools and extending existing pools in Chaves Eddy, and Lea Counties, New Mexico.

- (a) Create a new oil pool for Devonian production, designated as the West Gladiola-Devonian Pool, and described as:

TOWNSHIP 12 SOUTH, RANGE 37 EAST, NMPM  
Section 26: SW/4

- (b) Abolish the Buffalo Valley-San Andres Pool, described as:

TOWNSHIP 14 SOUTH, RANGE 31 EAST, NMPM  
Section 35: SW/4

- (c) Extend the Brushy Draw-Delaware Pool to include:

TOWNSHIP 26 SOUTH, RANGE 29 EAST, NMPM  
Section 24: NW/4

- (d) Extend the Coyote-Queen Pool, to include:

TOWNSHIP 11 SOUTH, RANGE 27 EAST, NMPM  
Section 11: SE/4  
Section 27: W/2

- (e) Extend the El Mar-Delaware Pool, to include:

TOWNSHIP 26 SOUTH, RANGE 33 EAST, NMPM  
Section 31: NW/4 Partial Section

- (f) Extend the Empire-Abo Pool, to include:

TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM  
Section 35: SE/4

- (g) Extend the West Henshaw-Grayburg Pool, to include:

TOWNSHIP 16 SOUTH, RANGE 30 EAST, NMPM  
Section 10: NE/4

- (h) Extend the Logan Draw Pool, to include:

TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM  
Section 19: SW/4 NE/4

- (i) Extend the West Pearl-Queen Pool, to include:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM  
Section 36: NW/4

- (j) Extend the Shugart Pool, to include:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM  
Section 3: SE/4

- (k) Extend the West Teas-Yates Pool, to include:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM  
Section 16: W/2 NW/4

CASE 1969:

Northwestern New Mexico nomenclature case calling for an order creating new pools and extending existing pools in San Juan and Rio Arriba Counties, New Mexico.

- (a) Extend the Aztec-Pictured Cliffs Pool, to include:

TOWNSHIP 30 NORTH, RANGE 11 WEST, NMPM  
Section 1: W/2 & SE/4  
Section 12: NE/4

- (b) Extend the Blanco-Mesaverde Pool, to include:

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM  
Section 6: All

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM  
Section 31: All  
Section 32: All

- (c) Extend the Escrito-Gallup Oil Pool, to include:

TOWNSHIP 24 NORTH, RANGE 7 WEST, NMPM  
Section 16: S/2 SW/4  
Section 17: S/2 SE/4

- (d) Extend the Horseshoe-Gallup Oil Pool, to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM

Section 21: SE/4 SE/4

Section 27: NW/4 NW/4

Section 28: NW/4 NE/4

TOWNSHIP 31 NORTH, RANGE 17 WEST, NMPM

Section 13: NE/4 SW/4

- (e) Extend the Puerto Chiquito-Gallup Oil Pool, to include:

TOWNSHIP 26 NORTH, RANGE 1 EAST, NMPM

Section 4: SW/4

Section 5: SE/4

Section 9: W/2 & SE/4

Section 16: NE/4

- (f) Extend the Totah-Gallup Oil Pool, to include:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM

Section 33: SE/4

Section 35: N/2

- (g) Extend the Verde-Gallup Oil Pool, to include:

TOWNSHIP 30 NORTH, RANGE 15 WEST, NMPM

Section 6: W/2

TOWNSHIP 30 NORTH, RANGE 16 WEST, NMPM,

Section 1: N/2 & E/2 SE/4

Section 2: NE/4 NE/4

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM

Section 22: N/2 SW/4

Section 29: SW/4

Section 30: NW/4 SW/4

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM

Section 36: SW/4 SW/4

- (h) Extend the Angels Peak-Dakota Pool, to include:

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM

Section 6: W/2

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM  
Section 7: All (partial)

TOWNSHIP 28 NORTH, RANGE 11 WEST, NMPM  
Section 13: W/2  
Section 14: S/2

TOWNSHIP 29 NORTH, RANGE 11 WEST, NMPM  
Section 25: E/2  
Section 36: All

- (i) Extend the South Blanco-Dakota Pool, to include:

TOWNSHIP 27 NORTH, RANGE 6 WEST, NMPM  
Section 26: W/2

- (j) Extend the West Blanco-Dakota Pool, to include:

TOWNSHIP 32 NORTH, RANGE 13 WEST, NMPM  
Section 25: All  
Section 26: All  
Section 36: E/2

- (k) Extend the West Kutz-Dakota Pool, to include:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM  
Section 34: E/2  
Section 35: All

OIL CONSERVATION COMMISSION  
P. O. BOX 871  
SANTA FE, NEW MEXICO

June 5, 1959

Mr. Kirk Newman  
Atwood & Malone  
P. O. Box 867  
Roswell, New Mexico

Dear Mr. Newman:

On behalf of your client, Pan American Petroleum Corporation, we enclose two copies of Order No. R-1417 issued June 5, 1959, by the Oil Conservation Commission in Case No. 1669.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

1r/

Enclosures

C  
O  
P  
Y

5-4-60  
L  
M  
1r/



*Cover  
file  
done  
1664*



MALCO REFINERIES, INC.

P. O. Box 660

ROSWELL, NEW MEXICO

EXPLORATION AND PRODUCTION DIVISION  
DONALD B. ANDERSON  
VICE PRESIDENT

DEPARTMENT HEADS  
GEOLOGICAL - PHIL D. HELMIG  
LAND - H. E. HARRINGTON  
PRODUCTION - J. R. MCINN

May 8, 1959

State of New Mexico  
Oil and Gas Conservation Commission  
Capitol Building  
Santa Fe, New Mexico

Gentlemen:

Malco Refineries, Inc. owns leases in the vicinity of the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico. We respectfully urge you to approve the application of Pan American Petroleum Corporation for an order for temporary 320 acre spacing in this gas pool.

We feel that one well will adequately drain much more than 320 acres. It is our considered opinion that 320 acre spacing in this gas pool is the absolute minimum spacing and will eliminate waste, protect correlative rights and will tend to make the pool more economical to develop and produce to its maximum areal extent.

Very truly yours,

MALCO REFINERIES, INC.

*Donald B. Anderson*  
Donald B. Anderson  
Vice President

DBA/ik



*Hooker  
Marked  
5-14-66  
R*

CLASS OF SERVICE

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# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS

DL = Day Letter

NL = Night Letter

LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination.

LA255 SSB731

*Case 1664*

L RWA184 NL PD=ARTESIA NMEX 11: 1959 MAY 11 PM 10 52  
=NEIL S WHITMORE OR ANY PAN AMERICAN ENGINEER=  
NEW MEXICO OIL CONSERVATION COMMISSION SANTA

FE NMEX=  
CONCUR WITH TEMPORARY 320 ACRE SPACING REQUESTED BY PAN  
AMERICAN IN ATOKA PENNSYLVANIAN GAS POOL EDDY COUNTY  
WOULD APPRECIATE HOUSING COMMISSION APPROVE SAID  
APPLICATION=

CARPER DRILLING CO INC MARSHALL ROWLEY=.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

SYMBOLS

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1201

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LA253 SSK420

MAIN OFFICE 805

L RWA183 NL PD=ARTESIA NMEX 11-5:27

NEW MEXICO OIL CONSERVATION COMMISSION=

1959 MAY 11 PM 10 51

SANTA FE NMEX=

ATTENTION PETE PORTER CONCUR WITH TEMPORARY 320 ACRE  
SPACING REQUESTED BY PAN AMERICAN IN ATOKA PENNSYLVANIAN  
GAS POOL EDDY COUNTY WOULD APPRECIATE HAVING COMMISSION  
APPROVE SAID APPLICATION=

CARPER DRILL CO INC MARSHALL ROWLEY=.

*Over 1669*

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

DOCKET: REGULAR HEARING MAY 13, 1959

Oil Conservation Commission, 9 a.m., Mabry Hall, State Capitol, Santa Fe

- ALLOWABLE:
- (1) Consideration of the oil allowable for June, 1959.
  - (2) Consideration of the allowable production of gas for June, 1959, for six prorated pools in Lea County, New Mexico, and also presentation of purchasers' nominations for the six-month period beginning July 1, 1959; consideration of the allowable production of gas for seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for June, 1959.

CONTINUED CASES AND REHEARING

CASE 1615: (Rehearing)

In the matter of the rehearing requested by Malco Refineries, Inc. for reconsideration by the Commission of Case No. 1615, Order R-1363. Case 1615 was an application by Stanley Jones, et al, for an order requiring Malco Refineries, Inc. to purchase oil produced from wells in the Dayton-Abo Pool in Eddy County, New Mexico, under the provisions of the Common Purchaser Act. Case 1615 culminated in the entry of Order No. R-1363 which required Malco Refineries, Inc. to purchase all oil tendered to it which is produced from the Dayton Field in Eddy County, New Mexico.

CASE 1522: Application of General Petroleum, Inc. , for an amendment to Order No. R-1299. Applicant, in the above-styled cause, seeks an order amending Order No. R-1299 to provide that any merchantable oil recovered from sediment oil shall not be charged against the allowable for wells on the originating lease, which amendment would revise Rule 311.

CASE 1635: Application of Mapenza Oil Company for an exception to the requirements of Order No. R-1224-A. Applicant, in the above-styled cause, seeks an order authorizing an exception to the salt water disposal requirements of Order No. R-1224-A for its State No. 1-A Well, located in the SE/4 SE/4 of Section 14, Township 18 South, Range 37 East, Hobbs Pool, Lea County, New Mexico.

NEW CASES

CASE 278: Application of Farm Chemical Resources Development Corporation and National Potash Company for an extension of the Potash-Oil Area as set forth in Order R-111-A. Applicants, in the above-styled cause, seek an order extending the Potash-Oil Area as defined in Order R-111-A to include additional acreage in Townships 19, 20, and 21 South, Ranges 29, 31, and 32 East, Lea and Eddy Counties, New Mexico.

CASE 1668: Application of Phillips Petroleum Company for an order promulgating temporary special rules and regulations for the Ranger Lake-Pennsylvanian Pool in Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order promulgating temporary special rules and regulations for the Ranger Lake-Pennsylvanian Pool and certain adjacent acreage in Lea County, New Mexico, to provide for 80-acre spacing units and well location requirements, and such other provisions as the Commission deems necessary.

CASE 1669:

Application of Pan American Petroleum Corporation for the promulgation of temporary special rules and regulations for the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order promulgating temporary special rules and regulations for the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to provide for 320-acre spacing units and for well location requirements.

CASE 1670:

Southeastern New Mexico nomenclature case calling for an order creating new pools, deleting a portion of a pool, and extending existing pools in Chaves, Eddy, Lea and Roosevelt Counties, New Mexico.

(a) Create a new oil pool for Queen production, designated as the Chisum-Queen Oil Pool, and described as:

TOWNSHIP 11 SOUTH, RANGE 27 EAST, NMPM

Section 16: SW/4

Section 21: N/2

(b) Create a new gas pool for Yates production, designated as the Chisum-Yates Gas Pool, and described as:

TOWNSHIP 11 SOUTH, RANGE 27 EAST, NMPM

Section 13: SE/4

(c) Create a new oil pool for Delaware production, designated as the Loving-Delaware Oil Pool, and described as:

TOWNSHIP 24 SOUTH, RANGE 27 EAST, NMPM

Section 1: SW/4

(d) Create a new oil pool for San Andres production, designated as the Prairie-San Andres Oil Pool, and described as:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM

Section 8: SW/4

(e) Delete a portion of the Square Lake Oil Pool described as:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

Section 3: W/2 NW/4

(f) Extend the Cave Pool to include:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

Section 3: W/2 NW/4

(g) Extend the Allison-Pennsylvanian Oil Pool to include:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM

Section 14: NW/4

Section 15: NE/4

(h) Extend the Crosby-Devonian Gas Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM

Section 21: SW/4

- (i) Extend the Dean Permo-Pennsylvanian Pool to include:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM  
Section 4: Lots 3, 4, 5, & 6

- (j) Extend the Empire-Abo Pool to include:

TOWNSHIP 18 SOUTH, RANGE 27 EAST, NMPM  
Section 2: NE/4  
Section 3: SW/4

- (k) Extend the Eumont Gas Pool to include:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM  
Section 29

- (l) Extend the Gladiola-Wolfcamp Pool to include:

TOWNSHIP 12 SOUTH, RANGE 37 EAST, NMPM  
Section 26: SW/4

- (m) Extend the Jalmat Gas Pool to include:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM  
Section 2: SW/4

- (n) Extend the Justis Blinebry Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM  
Section 24: NW/4

- (o) Extend the Justis Fusselman Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM  
Section 13: NW/4

- (p) Extend the Justis McKee Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM  
Section 25: NE/4

- (q) Extend the Leamex-Pennsylvanian Pool to include:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM  
Section 23: NW/4

- (r) Extend the Maljamar Pool to include:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM  
Section 13: SE/4

- (s) Extend the North Mason-Delaware Pool to include:

TOWNSHIP 26 SOUTH, RANGE 32 EAST, NMPM  
Section 18: NE/4

- (t) Extend the East Millman Queen-Grayburg Pool to include:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM  
Section 12: SE/4

- (u) Extend the Milnesand-San Andres Pool to include:

TOWNSHIP 8 SOUTH, RANGE 34 EAST, NMPM  
Section 14: E/2

- (v) Extend the Pearl-Queen Pool to include:

TOWNSHIP 19 SOUTH, RANGE 35 EAST, NMPM  
Section 33: NE/4

- (w) Extend the Saunders Pool to include:

TOWNSHIP 14 SOUTH, RANGE 33 EAST, NMPM  
Section 28: SW/4  
Section 29: SE/4

- (x) Extend the South Sawyer-San Andres Pool to include:

TOWNSHIP 9 SOUTH, RANGE 38 EAST, NMPM  
Section 28: SW/4 SW/4  
Section 33: W/2 NW/4

- (y) Extend the Shugart Pool to include:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM  
Section 25: W/2 SW/4  
Section 26: SE/4

- (z) Extend the North Shugart Queen-Grayburg Pool to include:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM  
Section 32: W/2  
Section 29: SW/4

- (aa) Extend the Shugart-Delaware Pool to include:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM  
Section 27: NW/4

- (bb) Extend the Square Lake Pool to include:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM  
Section 9: S/2

- (cc) Extend the Turkey Track Pool to include:

TOWNSHIP 18 SOUTH, RANGE 29 EAST, NMPM  
Section 27: SE/4

CASE 1671:

Northwestern New Mexico nomenclature case calling for an order extending existing pools in San Juan, Sandoval and Rio Arriba Counties, New Mexico.

- (a) Extend the Ballard-Pictured Cliffs Pool to include:

TOWNSHIP 23 NORTH, RANGE 3 WEST, NMPM

Section 17: All  
Section 18: All  
Section 20: All  
Section 28: W/2  
Section 29: N/2  
Section 33: N/2  
Section 34: N/2 & SE/4  
Section 35: SW/4

TOWNSHIP 23 NORTH, RANGE 4 WEST, NMPM

Section 11: SE/4  
Sections 12 thru 15 inclusive: All  
Section 19: N/2

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPM

Section 21: NW/4

- (b) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 27 NORTH, RANGE 5 WEST, NMPM

Section 6: W/2  
Section 19: W/2  
Section 30: NW/4

- (c) Extend the Chimney Rock-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 17 WEST, NMPM

Section 5: SE/4 SE/4  
Section 9: NE/4 NE/4

- (d) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 30 NORTH, RANGE 16 WEST, NMPM

Section 4: W/2 SW/4  
Section 6: NE/4 NE/4  
Section 10: N/2 SW/4 & SE/4

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM

Section 19: N/2 SE/4  
Section 20: S/2 SW/4  
Section 29: W/2 NE/4  
Section 33: NW/4

TOWNSHIP 31 NORTH, RANGE 17 WEST, NMPM

Section 23: NE/4 SE/4  
Section 24: NW/4

- (e) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 15 WEST, NMPM

Section 26: N/2 NE/4  
Section 34: NE/4 & NW/4 SE/4

- (f) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM

Section 26: SW/4  
Section 35: NW/4



BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1669

TRANSCRIPT OF HEARING

MAY 14, 1959

DEARNLEY - MEIER & ASSOCIATES  
INCORPORATED  
GENERAL LAW REPORTERS  
ALBUQUERQUE, NEW MEXICO  
3-6691 5-9546

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
MAY 14, 1959.

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IN THE MATTER OF:

CASE #1669 Application of Pan American Petroleum Corporation:  
for the promulgation of temporary special rules :  
and regulations for the Atoka-Pennsylvanian Gas :  
Pool in Eddy County, New Mexico. Applicant, in :  
the above-styled cause, seeks an order promul- :  
gating temporary special rules and regulations :  
for the Atoka-Pennsylvanian Gas Pool in Eddy :  
County, New Mexico, to provide for 320-acre :  
spacing units and for well location requirements.:  
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BEFORE:

Mr. Murray Morgan  
Gov. John Burroughs  
Mr. A. L. Porter

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: Next case on docket is 1669.

MR. PAYNE: Case 1669. Application of Pan American  
Petroleum Corporation for the promulgation of temporary special  
rules and regulations for the Atoka-Pennsylvanian Gas Pool in Eddy  
County, New Mexico.

MR. PORTER: I would like to call for appearances in  
this case.

MR. NEWMAN: Kirk Newman of Roswell, New Mexico,  
and Guy Buell, a member of the Texas Bar, representing Pan-American  
Petroleum Corporation.

I N D E X

<u>WITNESS</u>		<u>PAGE</u>
DANIEL R. CURRANS		
Direct Examination by Mr. Buell		2
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<u>NUMBER</u>	<u>EXHIBIT</u>	<u>FOR IDENTIFICATION</u>	<u>OFFERED</u>
Pan American's 1	Proposed Rules & Regulations	3	16
Pan American's 2	Plat	6	16
Pan American's 3	Cross Section	8	16
Pan American's 4	Compilation of Information	10	16
Pan American's 5	Tabulation of "Economic Data"	12	16
Pan American's 6	Series of Economic Calculations	14	16

MR. ANDERSON: R. M. Anderson, and A. M. McDonald, Junior, Sinclair Oil and Gas Company; and I have a statement I would like to make at the close of the case.

MR. BUELL: May it please the Commission, we have one witness, Mr. Currans, who has not been sworn.

(Witness sworn.)

DANIEL R. CURRANS

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Currans, state your full name, by whom you are employed, at what location, and in what capacity, please.

A Daniel R. Currans, employed by Pan American Petroleum Corporation as petroleum engineer, Lubbock, Texas.

Q Mr. Currans, you testified at prior Commission hearings, have you not?

A Yes, sir.

Q Your qualifications, are they a matter of public record?

A Yes, sir.

MR. BUELL: Any questions, Mr. Porter?

MR. PORTER: No questions concerning the witness' qualifications, they are acceptable.

Q (By Mr. Buell) I direct your attention, Mr. Currans, to what has been marked as Pan American's Exhibit 1, what is that?

A Exhibit Number 1 is a set of proposed rules and regulations for the Atoka-Pennsylvanian Gas Pool.

Q Are these the rules that you are recommending the Commission adopt for this pool?

A Yes, sir, and I would like to state at the outset that I would recommend that these rules be adopted for a period of a minimum of one year.

Q On a temporary basis of at least one year?

A Yes, sir.

Q All right, sir. In order, Mr. Currans, that everyone can analyze and evaluate your testimony and exhibit from your standpoint of your recommended rules, I would like you to take Exhibit 1 and briefly summarize each rule you are recommending.

A All right, sir. Starting with Rule Number 1, this rule would define the wells that would be considered to be in the Atoka-Pennsylvanian Gas Pool, those wells a mile or less from the outer boundaries would be governed by the rules of the Atoka-Pennsylvanian Gas Pool; those one mile or farther away would be considered wildcat wells.

Rule 2 provides for orderly development in that it requires that wells be located in the Northwest or Southeast quarter section of a governmental section, and that they be on a tract of 320 acres, which would be two contiguous quarter sections. In Rule 2-B, the outline for a method of exception to rule 2-A is given.

Q Are these normal exception provisions, Mr. Currans?

A Yes, sir. In fact, I based this rule on rules from an existing Pennsylvanian Gas Pool for 320-acre spacing, which is in effect.

Q And essentially these rules reflected on our Exhibit 1 are simply a copy of those rules?

A Yes, sir, essentially.

Q All right, go ahead.

A In Rule 3, the footage locations are outlined in 3-A, that wells will be located 990 feet from a quarter section line, and given tolerance of 200 feet for topographic conditions. In Rule 2-B, a method for exception to Rule 2-A -- beg your pardon -- In Rule 3-B, a method for exception to Rule 3-A is outlined for the footage locations for recompletion of an existing well, or some other such contention.

Rule 4 states that each gas purchaser in the Atoka-Pennsylvanian Gas Pool shall take ratably from all of the wells on an acreage basis.

Rule 5 provides that the gas production from each well will be separately metered, and that gas and the liquid hydrocarbon production will be reported in accordance with the Commission rules and regulations that are applicable.

Rule 6 is injected to make the now existing Atoka-Pennsylvanian wells standard as to their location, the quarter section in which they are located, and their footage locations.

Q Mr. Currans, I direct your attention now to what has been marked as Pan American's Exhibit Number 2. What is that exhibit?

A Exhibit 2 is a plat of the area in and around the Atoka-Pennsylvanian Gas Pool.

Q Now, have you designated on Exhibit 2 the wells which have penetrated this Pennsylvanian Gas?

A There are four such wells designated, they are encircled in blue.

Q All right, sir, for the benefit of the record, I wish you would name and locate the wells that have penetrated this Pennsylvanian Gas zone and are capable of commercial production.

A The first one is in Section 14, all of these are in Township 18 South, Range 26 East. Starting in Section 14 in the NW $\frac{1}{4}$  of the SW $\frac{1}{4}$  of Section 14 is the Standard of Texas Everest Number 1.

Q Was that the discovery well?

A Yes, sir, it was. In Section 15 in the NW $\frac{1}{4}$  of the SW $\frac{1}{4}$  of Section 15 is the Standard of Texas Martin Number 1. In Section 22, in the NW $\frac{1}{4}$  of the SE $\frac{1}{4}$  of Section 22 is Pan American's Flint Number 1.

Q All right, sir, that's three, what about the fourth well?

A The fourth well, while it tested gas from the Pennsylvanian, it was not completed as a commercial well.

Q Would you name and locate it, please?

A That fourth well is in Section 15 in the SE $\frac{1}{4}$  of the NW $\frac{1}{4}$  of Section 15, the Standard of Texas Terry Unit Number 1.

Q Now, Mr. Currans, you are recommending the adoption of 320-acre proration units. In view of that, let me ask you this, does present development lend itself to the assignment of such an amount of acreage?

A Yes, sir, it does.

Q Have you in any way on Exhibit Number 2 shown the possible acreage assignments that could be achieved?

A Yes, sir.

Q Briefly state for the record what those possibilities are.

A Well, in Section 22 where our Flint Number 1 is located, we show outlined in red and shaded in red the S $\frac{1}{2}$  of that section. This would be the acreage that we propose to dedicate to our Flint Number 1.

In Section 15, for the Standard of Texas Martin Number 1, you'll see that two dashed outlines are shown, one of them the S $\frac{1}{2}$  of Section 15, the other the E $\frac{1}{2}$  of Section 15, showing two possibilities there that could be dedicated to that well.

Q Why have you shown two possibilities on this well, Mr. Currans?

A Well, that's not one of our wells; I don't know what the operator would propose to dedicate to that well, which of these,



these are the two possibilities.---

Q Excuse me, go ahead.

A -- that would be in conformance.

Q Either of the two could be assigned?

A Yes, sir, either could be.

Q All right, sir, what about the other wells?

A In Section 14, the Standard of Texas Everest Number 1 we have shown the S $\frac{1}{2}$  outlined, of Section 14, outlined in one color, dashed line around the W $\frac{1}{2}$  of Section 14 in another color showing the two possibilities for assignment there.

Q Well, certainly then, Mr. Currens, it is obvious that present development will lend itself to the assignment of 320-acre proration units?

A Yes, sir.

Q All right, sir, I direct your attention now to what has been marked as Pan American's Exhibit Number 3, what is that, please?

A Exhibit 3 is a cross section including the three commercial completions in the Atoka-Pennsylvanian Gas Pool.

Q Do you show a trace of that cross section on your Exhibit Number 2?

A On Exhibit 2, a solid blue line from the Standard of Texas Everest Number 1 to Pan American's Flint Number 1, is shown with a dashed blue line intersecting it, bringing the Standard of Texas Martin into that line.

Q On Exhibit 3, how have you distinguished the producing formation?

A We have a blue line showing the top of the Atoka-Pennsylvanian sand, the sand from which the Atoka-Pennsylvanian Gas Pool produces. In addition, to show the entire interval of the sand, we have a shaded yellow zone, showing the sand thickness in the particular wells.

Q All right, Mr. Currans, from the standpoint of the purpose of this hearing, primarily with respect to your recommended proration unit ~~sia~~, what is the significance of Exhibit 3?

A Well, Exhibit 3 shows the sand to be contiguous in these three wells, no breaks anywhere that we can see in these three commercial completions. We have a common source of supply, in other words.

Q In your subsurface evaluation of this reservoir, Mr. Currans, did you see any data that would indicate to you that there would be any structural impediment to the free flow in this reservoir?

A I don't know of anything right now in the Atoka-Pennsylvanian Gas Pool that would impede the flow of gas through the reservoir; I see no reason why these wells should not be in communication.

Q All right, sir, I direct your attention now to what has been marked as Pan American's Exhibit Number 4. What is that exhibit?

A Exhibit Number 4 is a compilation of general and background information on the Atoka-Pennsylvanian Gas Pool, and on the wells that have penetrated the sand in this particular area.

Q All right, let's do this, Mr. Currans, in order to save time, and expedite the hearing, instead of reading the material contained in Exhibit 4, I will ask you questions to what I think are of the most pertinent data that is included in there.

A It is just background information, generally.

Q What are the structural features of this reservoir, Mr. Currans?

A Well, the production is from a sand body that is generally considered to trend from Northeast to Southwest through the area. It is continuous sand, the production is from a stratigraphic trap in this particular pool, and on those are the general information about that.

Q Have any cores been cut in this?

A Yes, one core was taken.

Q What did the core analysis reveal with respect to the reservoir rock we are dealing with?

A From the core analysis it was shown that, it could be seen that an average porosity through the portion that could be considered in that net pay would be nine and a half percent, and that the average permeability was 51 millidarcies.

Q Are all three of these commercial wells, gas wells, Mr. Currans?

A Yes, sir.

Q What is the approximate gas-liquid ratio?

A Well, liquid reserves of 11 to 17 barrels per MMCF have been reported.

Q Are any of the wells connected to a market?

A No, sir.

Q Has there been any production from the pool?

A There has been a small amount primarily for rig fuel, drilling other wells in the area.

Q What has been the cumulative production of gas?

A The cumulative gas production has been 222 MMCF

Q What about liquids?

A The liquid production has been 3,278 barrels.

Q I notice in Exhibit 4, Mr. Currans, the last four pages contain pertinent data on each of the completions that appears to be self-explanatory, do you have any comment on that?

A No.

Q Mr. Currans, with the small magnitude of cumulative production which you just testified to would indicate that you probably have no production data to indicate the drainage area of a well, is that correct?

A We have no data of that sort now that would firmly establish that.

Q Isn't that a primary purpose of this request to obtain pool rules on a temporary basis until we can accumulate such data?

A That's correct, sir.

Q From an economic standpoint, Mr. Currans, has your study of this pool revealed to you whether or not it would be economical to develop it on 160-acre basis?

A I don't believe that 160-acre development of this pool would be economical.

Q All right, sir, let me ask you this: Based on your study and your knowledge of this pool, and I'll ask you to make a prediction for me, do you feel that subsequent data when we do acquire it will show, will physically show that one well completed in this pool will effectively drain any size up to 320?

A Yes, sir, I believe that subsequent data will show that.

Q I direct your attention to what has been marked Exhibit 5, what is that?

A Exhibit 5 is a tabulation entitled, "Economic Data".

Q Just how, Mr. Currans, do you engineers when you are trying to ascertain an economic development pattern, how do you go about it?

A We look at the reserves we could attribute to the wells, and the cost to develop those reserves, and make that comparison on that basis.

Q I notice on your Exhibit 5 your first heading over reserves, is this exhibit more or less outlining some of the steps you would go through in making such an evaluation?

A It outlines the data that would be used, yes, sir.

Q Why don't you do this, Mr. Currans, just simply for each heading you have here, give a comparison as reflected on Exhibit 5, for a 320-acre well, and 160-acre well?

A All right, starting with reserves for 320-acres, average gas reserves are 8,553,000 MCF; distillate reserves would be 94,000 barrels. For 160 acres, 4,277,000 MCF of gas, 47,000 barrels of liquids.

With the next main heading, the price that we could expect to receive from these would be the same in either instance, 10 and 3/4s cents per MCF for the gas, \$2.79 a barrel for the liquid.

Our total income, and if you'll note here this is based on a 7/8ths working interest or standard lease, the income from the gas on 320 acres would be \$805,000.00, from the liquids \$230,000.00, or a total of \$1,035,000.00, for 320 acres. For 160, the total income would be \$518,000.00 for rate of payout, or rate of income during payout, the value of gas, again on a 7/8ths basis, and distillate for 320 acres totals \$131.00 a day, for 160 acres \$66.00 per day.

Q Mr. Currans, I notice the next heading you are getting ready to go into operating expenses, shows a hundred dollars for 320, and \$100.00 for 160, why is that?

A Operating expenses of \$100.00 for a well would be essentially the same for a well, be constant, one well costs a certain amount to operate.

Q This is on a per well basis?

A This is on a per well basis, yes, sir.

Q So if you had two 160-acre wells on a 320-acre tract, the total expense would be \$100.00 a month?

A That's true, yes.

Q Again, in the case of the next heading which is Investment, this is on a per well basis also, \$170,000.00 for a well cost, \$8,000.00 for surface equipment, or a total of \$178,000.00 for one well?

A That's one well, whether it be on 320 or 160.

Q All right, sir, I direct your attention now to what has been marked as Pan American's Exhibit Number 6, what does that include?

A Exhibit 6 is a series of economic calculations, based on the data of Exhibit Number 5.

Q I notice your first heading is "Payout", what do you mean by that, Mr. Currans?

A Well, this is a computation of the length of time that would be required to recover our investment for drilling and equipping the well, and it's the investment divided by the return, less the operating expense for the well.

Q What kind of a payout do you get on a 320-acre well?

A For 320 acres would be 51.2 months, that's a little over four years.

Q All right, what about a 160 acre well?

A For 160, 104 months, that's a little less than nine

years.

Q All right, sir, I notice your next heading, this is "Return on Investment", is that what your engineers refer to as "ROI"?

A Yes, sir.

Q What do you mean by that?

A Well, this is a comparison of the net return versus the cost of, the net return from this well or property, versus the cost to develop it.

Q How does the 320 acre well and 160 well compare on an ROI basis?

A For ROI on 320 acres we would have 4.1; on 160 acres, 1.48.

Q Mr. Currans, is it your opinion that the pool rules you recommend here will serve conservation as well as adequately protect the correlative rights of all parties in interest?

A Yes, sir.

Q Assuming along with me, if you will, Mr. Currans, that the Commission adopts your recommendation, and contrary to what you expect, subsequent data shows that we need to develop that pool down to 160-acres to deplete the reserves, assuming that now, would any harm be done, would any waste result because we produced for a year on a 320-acre basis?

A No, sir, I see no way that it could; on the contrary, if we developed on 160 initially, and ultimately could see that we



can efficiently drain the 320, then economic waste would have resulted from the drilling of additional wells.

Q All right, sir, under this same hypothesis, would anyone's correlative rights be damaged in any way because we operated for a year on 320 acres basis?

A No, sir.

Q Then actually all we are asking for is just the opportunity to produce under these temporary rules until sufficient data can be acquired to permanently adopt proper rules for the pool?

A That's correct, yes, sir.

MR. BUELL: That's all we have at this time, and I formally offer Pan American's Exhibits 1 through 6.

MR. PORTER: Without objection, Pan American's Exhibits 1 through 6 will be admitted into the record.

Any questions of Mr. Currans?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Currans, I was not here for all of your testimony, but did you offer any evidence that one well will drain 320 acres in this one pool?

A We have no definite proof at this time, however, there is every possibility that given some time to gather some data, we can prove that.

Q One of the wells in the pool has produced considerable gas to date, has not it?

A Not too large an amount; the individual well production is a 125 MMCF for the Standard of Texas Everest 1, and 70 MMCF for the Standard of Texas C. R. Martin Number 1.

Q What was the date of completion of that Everest Number One?

A The completion date on the Everest was October '57, I believe, yes.

Q And what was the completion date on the C. R. Martin Number 1?

A It is shown as July '58.

Q Is the C. R. Martin Number 1 the closest well to the Standard of Texas well?

A The C. R. Martin is a Standard of Texas well.

Q I mean, is it the closest well to the discovery well?

A Yes, sir.

Q Do you have any idea how much production had come out of the Everest well at the time the C. R. Martin well was brought in?

A I believe that the bulk of the production from the Everest well was used to drill the C. R. Martin, or I may be incorrect.

Q So the Everest well had produced very little up until the time the C. R. Martin well was completed?

A Yes.

Q Now, is there a well up in the SE of the NW of

Section 15 completed in this pool, or is that a dry hole?

A This well which is the Standard of Texas Terry in the SE of the NW of 15, was not completed as a commercial Pennsylvanian Gas producer, it did test gas on drill stem test from this Atoka-Pennsylvanian sand.

Q They didn't feel it was a commercial quantity gas?

A I believe it was about 215 MCF a day.

Q How does that compare with the normal drill stem test?

A In the Everest Number 1, a drill stem test flowed 1,600 MCF a day.

Q How much?

A 1,600. Later the perforations were drill stem tested at rates of 3,120 MCF a day.

Q Prior to any treatment?

A It is a natural completion. And 6,140 MCF a day. The C. R. Martin I have no drill stem test shown. The W. E. Flint, we tested at a rate of 5,800 MCF a day on drill stem test.

Q Now, when was your W. E. Flint Number 1 completed?

A In January of 1959.

Q Had the other two wells produced the bulk of their gas by that time?

A I believe all that production was at the time of the completion of the Flint.

Q Now, how does the initial pressure on the Flint compare with the initial pressures on the Everest and the C. R. Martin?

A Our drill stem test on the W. E. Flint, we had a shut-in pressure of 3750; the Everest was 3747, if I recall correctly. It had a drill stem test pressure of as high as 3747 has been reported as the initial pressure.

Q The drill stem test?

A Yes.

Q How about the C. R. Martin? Number 1?

A The C. R. Martin had no drill stem test that I know of.

Q Do you have any initial bottom hole pressure?

A No, sir, I don't have any initial pressure information on that well?

Q Do you think there is any evidence here at all that there is any communication between the Everest and the W. E. Flint?

A I don't think we have any data as yet to prove that interference, prove it conclusively, that's what we are asking time for.

Q What rate of production do you anticipate from these existing wells in the one year intervening time period?

A Well, we don't have a connection as yet, but we have estimated a take of 1,070 MCF a day for a well.

Q For each well?

A Yes, sir.

Q And when do you expect you'll be able to start producing that?

A I can't say, sir, I don't know.

Q Will it be within the year?

A We certainly hope so.

Q So you have no idea what percent of reserves that underlie this acreage would be produced during the intervening time period while the pool was on 320-acres?

A No, sir, I don't.

MR. NUTTER: I believe that's all. Thank you.

MR. PORTER: Anyone else have a question? The witness may be excused. Anyone else have testimony to present in this case? Any statement?

MR. KELLIHAN: If the Commission please, Jason Kellihan of Kellihan and Fox, Santa Fe, appearing on behalf of Standard Oil Company of Texas.

Standard Oil Company of Texas is in concurrence with the recommendations which have been made by Pan American Petroleum Corporation for adoption of 320-acre units in the Atoka-Pennsylvanian Gas Pool, and we are in accord with the field rules as they have been proposed by Pan American.

Standard believes, I might say continues to believe, that one well in this pool will adequately drain and develop 320 acres. We cannot economically justify, and I believe the record clearly shows, the drilling of wells at less than 320-acres units, and if adequate development is to be achieved in this pool, it is going to be essentially putting it on 320-acre basis. In connection with the proposed rules, of course, Pan American is proposing an

exception for present locations of the wells, and I might point out that this would apply in particular to the J. H. Everest unit well Number 1, which is the discovery well in the pool, that well being located 1980 feet from the South line, and 660 feet from the West line of Section 14.

If the Commission determines to approve this application, we would also request that the units be created by adjacent quarter sections. If it is determined by the Commission that those should lie in a particular direction, that is  $N\frac{1}{2}$ ,  $W\frac{1}{2}$ , or  $E\frac{1}{2}$  or  $S\frac{1}{2}$ , Standard Oil Company of Texas requests that for their J. H. Everest unit well Number 1, 320-acre unit assigned to the well consist of the  $W\frac{1}{2}$  of Section 14; and as to their C. R. Martin unit well Number 1, that the units should consist of the  $S\frac{1}{2}$  of Section 15. The reason for this being that in order to achieve development which Standard of Texas felt was necessary in this pool, it is necessary to unitize these areas, and those are committed to unit agreements, so we request that the units be formed in such manner that those units would be recognized.

MR. ANDERSON: R. M. Anderson with Sinclair Oil and Gas Company. Sinclair has a hundred and sixty acres in this pool, consisting of the  $S\frac{1}{2}$  of the  $S\frac{1}{2}$  of the  $N\frac{1}{2}$  of Section 22, just North of the Pan American well. Sinclair wishes to concur with Pan American in the proposed field rules in all respects except one, and we believe that the best interest of all parties concerned would be served by the adoption of a flexible well

location rule, and that would tend to amend Pan American's rule 2. We believe that an operator should have the leeway to locate his well in either quarter section of the 320-acre unit. Pan-American's well location rule 3-A, under flexible location rule, would still require that the wells be no closer than 1980 feet apart, and we feel that's reasonable in this case.

MR. PORTER: Mr. Newman.

MR. NEWMAN: If the Commission please, we have here a telegram from Carper Drilling Company, addressed to Neil S. Whitmore, who is the District Superintendent of Production for Pan American in charge of this area, or any Pan American engineer, addressed in care of New Mexico Oil Conservation Commission, Santa Fe, New Mexico. We would like to read the text of the telegram for the record, which is:

"Concur with temporary 320 acre spacing requested by Pan American in Atoka Pennsylvanian Gas Pool Eddy County would appreciate housing commission approve said application. Carper Drilling Company, Incorporated, Marshall Rowley".

I might say that Mr. Rowley is Superintendent of Carper Company, and on behalf of Western Union, we would like to amend this telegram by striking the word "housing", and putting in "Conservation".

MR. PORTER: Mr. Payne is suggesting it means "having" instead of "housing". I have not looked at it.

MR. NEWMAN: I think the opinion of Carper Drilling

Company is clear.

MR. PAYNE: We also received a statement here from Malco Refineries, Incorporated, concurring in the application of Pan American. The letter in its entirety will be incorporated into the record.

MR. PORTER: Anyone else have a statement or document in this case?

MR. NUTTER: I would like to ask a couple of questions. Mr. Kelliham, do you have any idea, as far as the Standard Oil Company of Texas, when a pipeline to the gas produced in this area will be available?

MR. BUELL: I might say for Pan American, we are currently negotiating for a contract; how long it will be, I don't know. The nearest pipeline is seven miles from the pool, it belongs to Southern Union.

MR. NUTTER: Is it anticipated that the well will have connections within one year?

MR. BUELL: We certainly hope so, we may be overly optimistic in thinking that; that's the reason we said for a minimum of at least one year, but in the event our contract negotiations --

MR. KELLIHAN: Mr. Nutter, as far as Standard of Texas is concerned, they are presently negotiating sales of contract, it is contemplated in there, this contract as it now stands, that it will become effective in December. Now, for us to predict that



actual physical takings in December, would begin in December, would be a little presumptuous in this case, but they are working, making every effort for finding a market by that date.

MR. NUTTER: Do you think you will be selling the gas from this pool within one year?

MR. KELLIHAN: All we can do is make the very best estimate; on the information we have, we would say yes, it will probably be selling gas in one year, but here at the end, we can't make a definite commitment.

MR. NUTTER: Thank you.

MR. PORTER: Any further comments on this case?  
Take the case under advisement.

(Whereupon the taking of testimony in Case No. 1669 was concluded.)

C O P Y

MALCO REFINERIES, INC.,  
P. O. Box 660  
ROSWELL, NEW MEXICO

May 8, 1959.

State of New Mexico  
Oil and Gas Conservation Commission  
Capitol Building  
Santa Fe, New Mexico

Gentlemen:

Malco Refineries, Inc. owns leases in the vicinity of the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico. We respectfully urge you to approve the application of Pan American Petroleum Corporation for an order for temporary 320 acre spacing in this gas pool.

We feel that one well will adequately drain much more than 320 acres. It is our considered opinion that 320 acre spacing in this gas pool is the absolute minimum spacing and will eliminate waste, protect correlative rights and will tend to make the pool more economical to develop and produce to its maximum areal extent.

Very truly yours,

MALCO REFINERIES, INC.

(Signed) DONALD B. ANDERSON  
by J.R.Jr.

Donald B. Anderson  
Vice President

DBA/ik

DEARNLEY - MEIER & ASSOCIATES  
GENERAL LAW REPORTERS  
ALBUQUERQUE, NEW MEXICO  
Phone CHapel 3-6691

STATE OF NEW MEXICO     )  
                              ) ss.  
COUNTY OF BERNALILLO    )

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 8th day of June, 1959,  
in the City of Albuquerque, County of Bernalillo, State of New Mexico.

*Joseph A. Trujillo*  
\_\_\_\_\_  
NOTARY PUBLIC.

My Commission Expires:

October 5, 1960.

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
MAY 18, 1960

IN THE MATTER OF:

CASE 1669 In the matter of the application of Pan American :  
Petroleum Corporation for the promulgation of :  
special rules and regulations for the Atoka- :  
Pennsylvanian Gas Pool in Eddy County, New Mex- :  
ico. Applicant, in the above-styled cause, seeks :  
an order promulgating special rules and regula- :  
tions for the Atoka-Pennsylvanian Gas Pool in :  
Eddy County, New Mexico, to provide for 320-acre :  
spacing units and for well location requirements, :  
as authorized on a temporary basis by Order No. :  
R-1417, dated June 5, 1959. :

BEFORE:

Mr. A. L. Porter, Chairman.  
Mr. Murray Morgan

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: The hearing will come to order. The Com-  
mission will consider next Case 1669.

MR. PAYNE: Case 1669. In the matter of the application  
of Pan American Petroleum Corporation for the promulgation of spec-  
ial rules and regulations for the Atoka-Pennsylvanian Gas Pool in  
Eddy County, New Mexico.

MR. PORTER: First, I would like to call for appearances  
in the case.

MR. NEWMAN: Kirk Newman of Roswell, representing Pan  
American Petroleum Corporation and the Ohio Oil Company, and have

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associated in this case Mr. Guy Buell, member of the Texas Bar, for Pan American; Terrell Couch, member of the Texas Bar, for Ohio.

MR. PORTER: Mr. Buell.

MR. BUELL: May it please the Commission, the current rules have been in effect on a temporary basis for the Atoka-Pennsylvanian Gas Pool for almost a year. At the time of the prior hearing, it was our hope that during that year's time we could develop a market and obtain some production experience. Unfortunately, that has not been the case. There has been no market developed. Production from the field has been in very minor volumes, mainly for drilling fuel purposes, so actually at this time the conditions are substantially the same as existed at the time of the last hearing. Because of that I would like to move that the current rule be extended on a temporary basis for another year's time, and I sincerely hope that in that period of time we can obtain a market and produce sufficiently to obtain the data necessary to recommend to the Commission permanent rules. There has been some additional development in the field, and in that connection, and as a matter of information, I would like to offer as Pan American's Exhibit 1, a map of the area contoured on top of the Atoka-Pennsylvanian sand. As Exhibit 2, a cross section running generally through the field and including some of the newer completed wells. And as Pan American's Exhibit 3, I would like to offer a brochure that contains pertinent field information and pertinent completion information of each well.

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(Whereupon, Pan American's Exhibits Nos. 1, 2 and 3 offered in evidence.)

MR. PORTER: Mr. Buell, would you establish by whom these Exhibits were prepared?

MR. BUELL: These Exhibits were prepared by Mr. Bill Smith, who is a petroleum engineer in our Lubbock District office. They were prepared especially for the purposes of this hearing here today.

MR. PORTER: Is there any objection to the admission of these Exhibits? The Exhibits will be admitted to the record.

(Whereupon, Pan American's Exhibits Nos. 1, 2 and 3 received in evidence.)

MR. PORTER: Mr. Couch.

MR. COUCH: If it please the Commission, Terrell Couch, representing the Ohio Oil Company. Since the last hearing on this pool, the Ohio has completed two producing gas wells in the Atoka-Pennsylvanian sand approximately a mile and a half south of the present horizontal limits of the pool. There have been a total of seven wells drilled in the area in what we consider to be Atoka-Pennsylvanian sand since this last hearing. We consider it appropriate and reasonable, and in this case, really necessary that the Commission consider here and include in its determination concerning the extension of these pool rules the question of the area to which the extended rules will apply. It is for that purpose that the Ohio will present testimony and Exhibits today. We will attempt

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to be as brief as possible and to repeat as little information as possible. We'll try to confine ourselves principally to the new information that has developed since the last hearing. We're asking the indulgence of the Commission; this is the way we would like to proceed.

MR. PORTER: Would you have your witness sworn?

(Witness sworn)

ROY M. YOUNG,

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

DIRECT EXAMINATION

BY MR. COUCH:

Q Will you please state your name, by whom you are employed and in what capacity?

A My name is Roy M. Young. I am employed by the Ohio Company in the capacity of reservoir engineer.

Q About how long have you been in that position, Mr. Young?

A Approximately nine years.

Q Have you testified before the Commission and are your qualifications and education and training part of the records of the Commission in prior hearings?

A Yes, they are.

MR. COUCH: Are there any questions?

MR. PORTER: No questions.

Q (By Mr. Couch) Mr. Young, in preparation for this hear-

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ing, and as a part of your duty as a reservoir engineer with Ohio, have you made a study of the available data of the area of the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico?

A Yes, I have.

Q To what have you directed your studies principally in carrying out this study?

A I have directed my studies towards the feasibility of extending the horizontal pool limits of the Atoka-Pennsylvanian Pool to include the south half of Section 21 and all of Sections 28 and 29, Township 18 South, Range 26 East.

Q The area that you refer to is the area in which Ohio has two newly completed wells, is that right?

A Yes, it is.

(Whereupon, Ohio's Exhibit 1 marked for identification.)

Q Will you please look at what has been marked Ohio's Exhibit 1?

A (Witness complies)

Q All right, Mr. Young, looking at Exhibit 1, would you please describe briefly what it is and what it shows?

A Ohio's Exhibit No. 1 is a map of the Atoka-Pennsylvanian Gas Pool, located in Township 18 South, Range 26 East, Eddy County, New Mexico.

Q I see an area surrounded by a red line. What is that area?





A The solid red line is the horizontal limits as presently defined by this Commission of the Atoka-Pennsylvanian Gas Pool.

Q And adjoining that red line is an area surrounded by a dashed red line. What is that area indicated to be, Mr. Young?

A The area outlined by the dashed red line is the area which I recommend to be included in the Atoka-Pennsylvanian Gas Pool horizontal limits.

Q And the area that's included in the red line is comprised of the Sections you mentioned a while ago?

A It's the south half of Section 21 and all of Sections 28 and 29.

Q You heard my opening statement that there are seven wells drilled since the last hearing, which have penetrated the Atoka-Pennsylvanian sand in this area. Will you point them out briefly, starting with the Standard of Texas Well in the northeast corner of the map designated Exhibit 1?

A The well that you just referred to is the Standard of Texas, Everest Unit 2, Well No. 1 in the southeast corner of Section 14. That well was completed as a dry hole and was plugged and abandoned.

Q That was in February of 1960?

A That is correct.

Q And it is outside of the horizontal limits?

A Yes, it is.

Q Now, coming south from there in Section 23, in the north-

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west quarter is another well that has been drilled since the last hearing?

A That is the Pan American Martin No. 3, and it is my understanding that it has just been completed and is in the process of testing. We show it on this map as a present drilling well.

Q Coming on down, then, down the structure to Section 33, you have another well with the same symbol, a red circle around the well. Has that well been drilled to the Atoka-Pennsylvanian sand since the last hearing?

A The well you refer to is the Campbell-Cleveland Well No. 1, located in the northeast quarter of Section 33. That well is an old well that has been drilled deeper by slim hole techniques. It is my understanding that the well has been carried to a depth which encountered the Atoka-Pennsylvanian sand. However, last test scout reports indicate they have failed to make a completion in the Atoka-Pennsylvanian sand.

Q Coming down to that well, we skipped one that has been drilled since the last hearing, that is the Nearburg & Ingram Well in the southwest quarter of Section, the northwest quarter of Section 27, is that correct?

A Yes. That's the Hawkins No. 2 completed in January, 1960.

Q That gives us four newly drilled wells or wells drilled since the last hearing, and two of the new wells are the Ohio wells in Section 29. Will you identify those, please?

A Those two wells are the Ohio Ralph Nix No. 1 in the south-

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east quarter of Section 29. The other well is the Ohio Andrew Arnquist Estate No. 1 in the northwest quarter of Section 29.

Q I see way down in Section 36, southwest quarter of 36, off to the left side of our Exhibit. Will you identify that well?

A Yes. That's the Gulf State "AC" No. 1 located in the southwest quarter of Section 36, Township 18 South, Range 25 East.

Q The wells that are shown on the map by red spots, Mr. Young, what are those? Are those completed as producing wells?

A Those have been wells that have been completed as producing wells in the Atoka-Pennsylvanian gas reservoir.

Q We have mentioned that those with the red circle are those that may not be finally completed at the present time. There are two of those that we have mentioned?

A Yes.

Q Then you have a third well symbol, a red circle with a cross through it?

A Those are dry holes that have been drilled in the area, yet have penetrated the Atoka-Pennsylvanian sand.

Q Those wells are shown on your map in connection with your structural control and were used by you, all of these wells that we have mentioned to prepare the structure map, all except the two drilling wells?

A Yes, that is correct.

Q How did the two drilling wells appear in connection with

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the structure map that you made?

A From our last test scout reports, the Campbell-Cleveland No. 1 in Section 33 encountered the Atoka-Pennsylvanian pay at approximately minus 5845.

Q Is that about where it appears on your structure map?

A Yes, it is.

Q What about the Campbell Well?

A That was the Campbell Well we just discussed.

Q I mean the Pan American Well. I beg your pardon.

A The Pan American Martin in Section 23 encountered the Atoka-Pennsylvanian pay at minus 5751, which is approximately the location that I have on the Exhibit No. 1.

Q I see a lot of shaded area on this map, blue shaded area.

A All of the shaded area, which amounts to approximately forty-five hundred acres, is acreage that is under leasehold by the Ohio Oil Company.

Q Mr. Young, you have identified this area that you are recommending be included in the horizontal limits of the Atoka-Pennsylvanian Pool. State your opinion as to whether that area can reasonably be deemed to be productive of gas from the Atoka-Pennsylvanian Pool.

A It is my opinion that the geological and engineering data throughout this area indicate that the reservoir in which the two Ohio wells are completed is the same reservoir that the wells that are now classified as being in the Atoka-Pennsylvanian Pool are



producing from. It is also my opinion that the area in between is continuous and productive of gas.

Q From the same reservoir?

A From the same reservoir.

Q And that all the area in Sections 28, 29 and the south half of 21 is reasonably deemed to be productive of gas?

A Yes, sir.

Q Will you then describe for us briefly your opinion as to this reservoir, what it is and just a physical description of it, very briefly?

A As a physical description of this reservoir, it appears to be a typical Pennsylvanian sand lens. The porosity and permeability in the sand pinches out abothdip updip and downdip of the formation. This is evidenced by the four wells in the northeast portion of the Exhibit 1, beginning with the Standard of Texas, Everest Unit No. 2 in the southeast quarter of Section 14, that was a dry hole although the sand was present. But it lacked porosity and permeability. And then progressing updip, we find that the Standard of Texas Everest No. 1 in the southwest quarter of Section 14 had approximately thirty-four feet of net pay. Progressing on updip, we find that the Standard of Texas Martin No. 1 had approximately fifty-two feet of net pay. Then progressing still further updip, the Standard of Texas Terry No. 1 in the northwest quarter of Section 15 was completed as a dry hole; thus showing that from downdip the porosity and permeability had pinched out

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and the porosity and permeability then built up to thirty-four feet, to fifty-two feet, and then pinched out again as we went up-dip, showing that this is a stratigraphic trap.

Q This condition that you have described, you described it rather graphically to me as we were discussing this case the other day. Tell them how you got it in my mind, what it looks like, how it pinches out on one end and fattens up and pinches out on the other side.

A Well, taking a cross section through the four wells that I just discussed, I picture the cross section of the reservoir as being very similar to the cross section of an airplane wing when it gradually tapers up and becomes thicker and then on the leading edge of the airplane wing, it abruptly pinches out to zero.

Q Now, that's a description of this zero as it exists through the Standard wells up there through the northeastern part of Exhibit 1. Will you move down to the area where the Ohio wells are located, and starting with the Campbell Well where the sand was found in an attempt for slim hole completion but had shown to be pinched out, according to our information, come up-structure from there and describe the reservoir in there? Is it similar to what we found in the northeastern portion of the reservoir?

A In my opinion, it is very similar as to the condition that I just described in the northeast portion of Exhibit 1. The Campbell Well, from our last test scout reports, is non-productive in the Atoka-Pennsylvanian gas sand, although the sand is present.

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Then, in the two Ohio Wells encountered net pays of sixty-two and fifty-eight feet each, and it would be my opinion as we go further to the northwest, the sand will pinch out as we go updip.

Q Now, this structure map was drawn, using the logs of wells that you personally examined the log, all except these two wells that are shown with the red circle around them, is that right?

A Yes, sir, that is correct.

Q You had how many wells that you were using for control on the structure map?

A I believe there's ten.

Q Looking at this structure map, I would like you to give us your opinion, based on the information which it shows, which in turn is based on your personal examination of the logs. What's your opinion as to whether there is any lack of continuity or any faulting in between the present horizontal limits of the Atoka-Pennsylvanian Pool and the area which you are proposing to be included in the pool?

A It would be my opinion that there is definitely reservoir continuity between the two areas as just described.

Q Is there any available data that you have found or seen that indicates that there is any faulting or that there is any separation in those two areas?

A No, sir, there is not.



(Whereupon, Ohio's Exhibit 2 marked for identification.)

Q Will you look, now, at the document you prepared, that's marked the Ohio's Exhibit 2? Exhibit 2 is a southwest northeast cross section, is it not, Mr. Young?

A That is correct.

Q Its location on the ground is shown on Exhibit 1 in what manner?

A By yellow line marked "X" to "X" prime.

Q How many wells are included in this cross section, Exhibit 2?

A There are six wells included in the cross section. All six of these are producers.

Q You've reproduced on this cross section the electric log of each of those wells?

A That is correct.

Q Would you briefly describe Exhibit 2, the data that is on it, for example?

A Exhibit 2, as we said, is a cross section, southwest northeast cross section, and is made up of the electric logs of the various wells.

Q Name--

A The name, elevation and location of each well is shown above its log on the cross section along with the completion data of the well.

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Q That completion data is shown below each of the logs, is shown on the well, is that right?

A The completion data is the last data shown above the log of each well.

Q The completion data was taken off the total depths?

A The completion data is shown below each well.

Q The yellow strip running across the cross section, starting on the right side with the Texas, coming down to "AC" Gulf No. 1, what does that yellow strip represent?

A That yellow zone is the Atoka-Pennsylvanian gas sand.

Q The heavy line at the top of the yellow zone is what?

A The top of the Atoka sand.

Q What are the thinner lines? There are two shown above the yellow zone, and one shown below. What do those show?

A Those are other correlation points included in the cross section to further substantiate the continuity of the structure through this area.

Q Those lines represent points that you have picked in these logs that are ascertainable in each of the logs showing the same structure continuity?

A That is correct.

Q Both above and below the Atoka-Pennsylvanian sand?

A Yes, sir.

Q Does the yellow zone show the perforated interval of each



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of the wells?

A Yes, it does.

Q I notice that the yellow zone on Exhibit 2 runs rather steeply up and down and up along the way here. Does that indicate the way you think the top of the Atoka-Pennsylvanian sand runs from up in the northeast down to the southwest, or does it show something else to us?

A No, sir. It shows the dip between each well on the cross section. If you'll note, on the right-hand side of the cross section, we begin with the Standard Oil of Texas, Everest No. 1, and proceed to the Standard of Texas Martin No. 1, and in doing so, if you will note, on the structure map we go updip. Then, from the Standard Martin No. 1 we proceed downdip to the Pan American Flint No. 1. Further downdip, the Nearburg & Ingram Hawkins No. 2. From that point, then, we proceed updip to the Ohio Oil Ralph Nix No. 1, and further updip to the Gulf State "AC" No. 1.

Q Then, actually, what does this indicate with regard to the thickness of the pay as it relates to the structural location of the well? Is there any relation between those two?

A We have noticed a definite relationship between the net pay and the location of the well on the structure. That is more vividly shown on Exhibit No. 1 where, in the parenthesis below each well, we show the net pay for each well.

A Now, for example, the Ohio Ralph Nix No. 1, what's the pay thickness that's shown on there, on Exhibit No. 1?



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A That's sixty-two feet.

Q What is its structural location? What's the top of the sand?

A Minus 5635.

Q How is it located structurally with relation to the Standard of Texas Martin No. 1?

A The top of the Atoka-Pennsylvanian sand in the Standard Martin No. 1 is minus 5614, so, therefore, it is practically flat with the Ohio Nix No. 1.

Q So shown on the structure map, being in the same contour area?

A Yes.

Q The pay thickness there in that well?

A In the Standard Martin No. 1 it is fifty-two feet.

Q Actually looking, then, at Exhibit 2, we can observe that those same two wells are shown on that Exhibit, are they not?

A Yes, sir.

Q They're shown there to be virtually flat with each other, are they not?

A Yes.

Q These logs, Exhibit 2, were lined on a subsea datum point, were they?

A Yes, we used minus 5700.

Q In your opinion, does this cross section show anything about the continuity of the pay of the Atoka-Pennsylvanian reservoir



throughout this area?

A Yes, sir, I believe the Exhibit No. 2, the cross section shows the continuity of the Atoka-Pennsylvanian pay throughout this area.

Q Mr. Young, summing up the information that you gained from your study of this pool, and as you have depicted it on Exhibits 1 and 2, will you state in your opinion whether the Atoka-Pennsylvanian reservoir is one continuous reservoir throughout the present horizontal limits of the pool and the proposed extension that you have recommended here?

A Yes, sir, I believe it is.

Q You think that's one common source of supply that would be within those pool boundaries?

A Yes, I do.

Q Is it possible or probable that the pool will extend outside those lines in other directions?

A I personally feel that the Atoka-Pennsylvanian Pool will extend even further southwest than the horizontal limits that we areproposing today.

Q And if the temporary rules are made applicable by including your proposed area, would they then extend to all operations within a mile of the proposed extension?

A Yes, sir.

Q Mr. Young, in previous hearings, the records of which you have seen in connection with this pool, expert witnesses have testi-

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fied that one well completed in the Atoka-Pennsylvanian Pool is capable of efficiently and economically draining three hundred twenty acres. What is your opinion with regard to that testimony?

A I concur in all that testimony.

Q And it's also been recommended that those temporary rules be continued in effect for a period of a year. What is your opinion about that?

A I also concur in the recommendation to extend the temporary rules for an additional year.

Q Is it your definite understanding that that is the position of the Ohio Oil Company?

A Yes, it is.

Q In addition to being your personal opinion--

A Yes.

Q --what can you tell us about the Ohio's situation insofar as the sale of its gas is concerned?

A The Ohio Oil Company has contracted to sell its gas to Transwestern Pipeline Company. The latest indications are that Transwestern will have its line completed soon, and gas delivery should commence in the relatively near future.

Q After a year, assuming that these deliveries commence in the relatively near future and that the other operators obtain markets within the relatively near future, what is your opinion about the status of this matter a year from now?

A Sufficient production data should be available at the



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end of another year which I believe will completely justify three hundred twenty acre spacing and permit the adoption of permanent pool rules.

Q Your recommendation that the pool rules be applied, extended for another year and that the pool limits be extended to include Sections 28, 29 and the south half of Section 21, have you considered those recommendations in the light of correlative rights and matters such as that?

A Yes, I recommend that this Commission extend the horizontal pool limits to include that area which you just mentioned. The approval of this recommendation will result in the orderly and economic development of this gas pool, and at the same time protect correlative rights and prevent waste which might otherwise result from the drilling of unnecessary wells. It will also hasten the ultimate development of the field and the establishment of the productive limits of this pool.

Q Mr. Young, in the event you are in the wrong, in the event of production history that shows one hundred sixty acres would be correct, in your opinion, could that be resorted to without damaging correlative rights in the area, so far as you can see now?

A Yes, sir, I believe it could.

Q But if the wider spacing is not followed here, then it would be impossible to go back to wider spacing when production should establish that that was proper, is that right?

A That is correct.



MR. COUCH: I have no further questions.

MR. PORTER: Does anyone have a question of Mr. Young?

MR. NUTTER: Yes, sir.

MR. PORTER: Mr. Nutter.

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Young, I believe you stated that it appears that whether a well encounters net feet of pay or not depends a lot on the structural position of the sand.

A There is a correlation between its position on the structure and its net pay that has been encountered.

Q Up in the northeast end of the pool, a well high on the structure encountered no pay--

A That's the point I'm making; as you go way up high on the structure, it will pinch back down. I tried to give the analogy of the section of an airplane wing.

Q Now, down at the extreme southwestern end of the pool, this well that encountered pay was down in the middle of the pool. What do you attribute that to?

MR. COUCH: You are speaking of the well in Section 1?

MR. NUTTER: I am speaking of Pan American's Matlock No. 1 Well.

A That well encountered the sand, but there was no pay, and it actually is one well that does not fall into the correlation that I previously mentioned.

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Q Will there be a possibility of drilling a well in Section 28 that wouldn't fall into the correlation?

A There is always a possibility of that, Mr. Nutter, but in my opinion, it would not be in this case.

Q Do you know at what depth the Campbell Cleveland No. 1 Well encountered the Atoka-Pennsylvanian pay?

A That was a slim hole well, an old well drilled deeper by slim hole techniques, and they had difficulty in logging the well as deep as the Atoka-Pennsylvanian sand was. However, our scout reports indicate that the sand was present, but did not have any porosity and permeability. In fact, so far as I know, the operators could not complete in it.

Q You don't know what the top of the pay was there, then?

A Our scout reports indicate it was approximately 5850, minus 5845.

Q Which would be in about the proper location--

A Yes, sir.

Q --as far as your contour lines here?

A Actually, it influenced my contour in that area, Mr. Nutter.

Q You did use that, then?

A Yes, sir, I did. I also have used a uniform dip throughout the map.

Q Well, now, Mr. Young, your proposal here to include certain acreage in the limits of the pool, is there a possibility that the southwest quarter of Section 21, being located as it is





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structurally, might be dry acreage?

A As I said a while ago, Mr. Nutter, it's possible that it may not be productive.

Q How about the southeast quarter of Section 28?

A It's always possible, but I feel like it's all productive.

Q Mr. Young, you stated that you concurred with the previous testimony that one well in this pool would drain three hundred twenty acres. What do you base your concurrence on?

A The previous testimony, I believe, will show what core analysis is available on this pool is approximately 51 millidarcies. In my opinion, a sand with 51 millidarcy permeability is capable of draining far in excess of three hundred twenty acres.

Q Did Ohio take cores on their wells?

A No, sir, we did not.

Q You stated that you expected Transwestern Pipeline to be completed soon and purchases of gas to be made in the relatively near future. Would you define what soon is, and what relatively near future means?

A It is my understanding that the Transwestern Pipeline will be completed and in service by mid-July.

Q Mid-July.

A When we will get our pipeline connection, I could not ascertain.

Q Has Transwestern indicated to you when they will be buying gas in this pool?



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A No, sir.

Q Now, the mid-July date is the date of completion of the trunk line to the West Coast, I assume?

A Yes, I believe that's correct.

MR. NUTTER: I believe that's all.

MR. PORTER: Mr. Payne.

BY MR. PAYNE:

Q Mr. Young, in the event a dry hole was drilled in Section 28, the Ohio Oil Company wouldn't be adverse to the Commission's looking at these pool boundaries again at that time, would it?

A No, sir.

MR. PAYNE: Thank you.

MR. PORTER: Mr. Utz.

BY MR. UTZ:

Q Your Ohio Andrew Arnquist Well in the northwest quarter of Section 29, what kind of a well did that make?

A Preliminary tests indicate it was a very good well.

Q Is that quite a nice section of pay in there?

A Yes. Fifty-eight feet of net pay.

Q The southwest quarter of Section 28 that Mr. Nutter inquired about, do you think there might be a possibility that that would be dry in view of the Campbell Cleveland Well being a dry hole?

MR. COUCH: You said the southwest quarter of--

MR. UTZ: The east quarter, I mean.



MR. COUCH: Inquired about the southeast.

A It could possibly be dry, Mr. Utz, but a well drilled on the southwest of 28 would also be structurally in the same position as the Nearburg & Ingram Hawkins No. 2 in Section 27. Therefore, it's, in my opinion, very possible that the southeast quarter of 28 would be productive.

Q Well, from looking at your pool map here and your contours, it looks as though, does it not, that the permeability of the pool seems to cut across the contours as they go updip. In other words, as the pool progresses to the southwest.

A I didn't understand your question.

Q Looking at your contours and the productive wells that are within the pool limits that you have suggested here, does it not look as though there's a good possibility that the permeability or the pool limits cut across the contours as the pool progresses to the southwest? In other words, the pool goes updip across contours?

A If I understand your question correctly, I do not mean that this pool would probably pinch out along a certain contour. These pinch-outs don't necessarily follow a contour. Therefore, in answer to your question, yes, the permeability could pinch out across contours.

Q The way it's going, it looks like it might leave that southeast quarter section of 28 dry. Does that look like a possibility?

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A A portion of the southeast quarter of Section 28 could very easily be dry or non-productive.

Q Does Ohio intend to drill any more wells in the near future?

A Yes, sir.

Q Do you know now what location you plan for the new wells?

MR. COUCH: Mr. Porter, I would like to say that I think Ohio's plans as to what additional wells will be drilled and what locations they will be depends on whether the Commission would extend the horizontal limits. At least, that would influence our management's decision. As I might point out, in order to conform to the Atoka-Pennsylvanian rules for the present time, we felt like we were in that reservoir. The Arnquist Well did not conform specifically with the Atoka-Pennsylvanian rules, but this Arnquist Well, we did change for the very purpose. We do plan to drill other wells in the area. Just when and where would depend on the outcome of the hearing.

Q (By Mr. Utz) Assuming that you continue to have temporary three hundred twenty-acre spacing, would you answer the question?

A It would be my recommendation to my management to drill in the southeast quarter of Section 30. Just exactly where the management will decide to drill the next well, I do not know at this time.

Q You don't know of any other wells that may be drilled be-

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tween Section 29 and the pool as it is now delineated?

A No, sir, we havw no acreage in Section 28.

Q I knew you didn't have any acreage. I thought you might know of some projected holes.

A No, sir, I don't know of any.

MR. UTZ: That's all.

MR. PORTER: Anyone have a question?

BY MR. PAYNE:

Q Mr. Young, I presume that the Ohio and Gulf Oil Corporation will communitize that south half of Section 29, should three hundred twenty-acre spacing be established?

MR. COUCH: Might I answer that question, Mr. Payne? I think my information on it might be a little more up-to-date than Mr. Young's. He has been working on what this reservoir looks like. I have had something to do with the contract work about it. The Gulf has contacted us and we are in the process of working out a unit with them for the purpose of completing the entire south half of Section 29. Our lease on the one hundred sixty acres on which the well is located contemplates three hundred twenty-acre spacing. The eighty acres is a separate lease of the Ohio and contains pooling provisions, but it will be necessary for us to force pool or get concurrence from the mineral owners. It is our plan to form a full unit down there.

MR. PAYNE: Thank you.

MR. PORTER: Anyone else have a question? Did you

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offer your Exhibits?

MR. COUCH: Not yet. I want to ask one or two more questions, if I may.

MR. PORTER: I see. You may proceed.

REDIRECT EXAMINATION

BY MR. COUCH:

Q With regard to the dry hole or plugged and abandoned well of Pan American down in Section 1, southwest corner of our map, Exhibit 1--

A Yes.

Q --somewhere this reservoir is going to stop, isn't that right?

A Yes, sir, it is.

Q This may be an indication that that's the tail end of it down there?

A Yes, sir.

Q There are other wells drilled in this middle of the reservoir up through here, as shown on your map that aren't dry holes, and that's a certainty, isn't it?

A Yes, sir.

Q It is true there are many fields in the State of New Mexico, particularly in the Pennsylvanian sand, where due to localized conditions, dry holes are drilled within pool limits?

A Yes, sir, that's true.

Q Now, with regard to the Campbell Well, you did not have

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an electric log on that because, according to what we understood, they couldn't get the logging device down the seven and two-eighths casing.

A That's right.

Q I use the casing word advisedly.

A Yes.

Q That is why we didn't log it, and that is why we used it as one of the wells you started to log on in preparing this Exhibit?

A That's correct.

Q Is there anything else, Mr. Young, that you would like to add to your testimony in connection with this hearing?

A I don't believe there is.

MR. COUCH: We offer in evidence Ohio's Exhibits 1 and 2.

MR. PORTER: Without objection, the Exhibits will be admitted.

(Whereupon, Ohio's Exhibits 1 and 2 received in evidence.)

MR. COUCH: Mr. Porter, if I may, I would like to make a brief closing statement.

MR. PORTER: The witness may be excused. You may proceed with your statement.

(Witness excused)

MR. COUCH: It's going to be short and it's going to be quick.



I'm holding the rules of the Commission that state: "Pool" means an underground reservoir containing a common accumulation of crude petroleum oil or natural gas or both."

The Commission knows these rules better than I do, but when we are thinking in terms of having to move a mile or mile and a half from a present horizontal limit line to another area, I can see the need for the reluctance and being cautious about these markets. However, the Commission in applying three hundred twenty-acre spacing in one area and in considering whether it should be applied in another, and in a case like this where all available evidence indicates that, notwithstanding the fact there have been some wells drilled in between, this is one continuous structure and is one common reservoir and is one common accumulation, we think it is very obvious that correlative rights will be protected only, only by including all of this area within the horizontal limits of this pool; and that the application of 320 spacing to a portion of it through the temporary continuation here should also extend to the additional part of the same reservoir that has the same characteristics. Thank you.

MR. PORTER: Anyone else have a statement?

MR. KELLAHIN: Jason Kellahin of Kellahin & Fox, representing Standard Oil Company of Texas. Standard Oil Company of Texas is the operator of two shut-in gas wells in the Atoka-Pennsylvanian Gas Pool. Standard concurs with the recommendations and motion that was made by Pan American Petroleum Corporation for

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continuance of the present temporary rules in the Atoka-Pennsylvanian Gas Pool. Standard believes that one well will drain in excess of three hundred twenty acres, and that drilling of wells on less than three hundred twenty acres would be uneconomical. Standard Oil Company of Texas has executed a gas purchase agreement for the area with Transwestern Pipeline Company dated December 3rd of 1959. This application for a Certificate of Public Convenience and Necessity is currently on file with the Federal Power Commission.

MR. PORTER: Anyone else have a statement to make? Mr. Buell.

MR. BUELL: I might state with respect to Ohio's request to extend the pool limits, it is the opinion of our reservoir engineers that the Ohio wells are completed in the same Atoka-Pennsylvanian sand as the other wells in the field.

MR. PORTER: Mr. Payne, do you have some correspondence concerning this case?

MR. PAYNE: Yes, sir. The following companies concur in Pan American's application to continue the three hundred twenty-acre spacing in this pool for another year: Gulf Oil Corporation, Nearburg, Carper Drilling Company, Sinclair, and six mineral interest owners, individuals.

MR. PORTER: I will concur in the continuation of the present pool rules for another year.

MR. NUTTER: Mr. Buell, has Pan American's acreage been



dedicated to any gas purchasing company?

MR. BUELL: We are currently negotiating a contract with Transwestern and Southern Union. As yet, we have not executed a contract with either. We feel it is imminent.

MR. PORTER: Does anyone else have anything further to offer in the case? The Commission has decided to continue the present pool rules in effect for a year from the date of the expiration of the present order. We have also decided that the pool should be extended to include the two Ohio wells. Now, we are not just sure yet whether all the acreage as proposed by Ohio will be included, but enough acreage will be included in the extension to take in these two Ohio wells.

MR. COUCH: As far as Ohio is concerned, it was our effort in outlining the recommended area to recommend what we thought to be the most reasonable area. Certainly, whatever the Commission does on that will meet with our entire approval.

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STATE OF NEW MEXICO )  
 ) ss  
 COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in machine shorthand and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 5<sup>TH</sup> day of June, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

*Ada Dearnley*  
 NOTARY PUBLIC

My Commission expires:

June 19, 1963

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SPECIAL RULES AND REGULATIONS  
FOR THE  
ATOKA PENNSYLVANIAN GAS POOL

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Atoka Pennsylvanian Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Atoka Pennsylvanian Gas Pool shall be spaced, drilled, and operated in accordance with the Rules and Regulations in effect in said Atoka Pennsylvanian Gas Pool provided said well is projected to and/or completed in the Atoka Pennsylvanian Gas Pool.

RULE 2. (a) That each well drilled or recompleted in the Atoka Pennsylvanian Gas Pool shall be located in the northwest or southeast quarter section of a governmental section on a tract consisting of approximately 320 acres comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the United States Public Lands Survey.

(b) The Secretary of the Commission shall have authority to grant an exception to Rule 2(a) without notice and hearing where application has been filed in due form and where the following facts exist and the following provisions are complied with.

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections or lots.

2. The non-standard proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas.

4. The length or width of the non-standard gas proration unit does not exceed 5280 feet.

5. That applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit.

6. In lieu of Paragraph 5 of this Rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary of the Commission may approve the application, if, after a period of 30 days following the mailing of said notice, no operator has made objection to the formation of such non-standard gas proration unit.

RULE 3. (a) That no well shall hereafter be drilled to or recompleted in the Atoka Pennsylvanian Gas Pool nearer than 990 feet to a quarter section line of a governmental section; provided, however, that a variation of 200 feet for topographic conditions will be permissible.

(b) The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 3(a) without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 5280-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox locations, and shall approve such unorthodox location only in the absence of objection from any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. Each gas purchaser in the Atoka Pennsylvanian Gas Pool shall take ratably from all wells producing from said common source of supply, apportioning its takes during any given calendar year among said wells on the basis of the acreage dedicated thereto.

RULE 5. The monthly gas production from each well in the Atoka Pennsylvanian Gas Pool shall be metered separately and the gas production and associated liquid hydrocarbon production therefrom shall be reported to the Commission in accordance with the applicable Commission Rules and Regulations.

RULE 6. Any well which was projected to or completed in the Atoka Pennsylvanian Gas Pool prior to the effective date of this order be and the same is hereby granted an exception to Rule 2(a) and Rule 3(a) of these Special Rules and Regulations.

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
Pawnee EXHIBIT No. 4  
CASE 1669

ATOKA PENNSYLVANIAN GAS POOL  
EDDY COUNTY, NEW MEXICO

General Information

The Atoka Pennsylvanian Gas Pool was discovered by the completion of Standard Oil Company of Texas J. H. Everest No. 1, which is located 1980' FSL & 660' FWL of Section 14, T-18-S, R-26-E, Eddy County, New Mexico. This well was completed in October, 1957 with a calculated absolute open flow of 21,000 MCFD. While testing, the well also produced distillate with recoveries of 11 to 13 barrels per MMCF of gas. Production is from a coarse grained sand found at approximately 9100'. Three successful completions have been realized to date and one non-commercial well has been drilled. A market for this gas has not yet been developed and only relatively small volumes have been produced. This production has been primarily to furnish gas as rig fuel and for drilling other wells in the area.

Pertinent data for the individual wells are attached.

Structural Information

The sand body from which the Atoka Pennsylvanian Gas Pool produces is considered to be a continuous sand trending generally in a northeast-southwest direction. Production is considered to be from a stratigraphic trap in an area of porosity and/or permeability development. The dip of the sand is to the southeast in this area.

Characteristics of the Reservoir Rock and Fluids

The pay has been described on core analyses as a gray, coarse grained sand. Porosity and permeability of the pay in the section of the well where a full hole core was obtained averaged 9.5% and 51 Md., respectively. Log calculations support this porosity average. Distillate recoveries have been reported ranging from 11 to 17 barrels per MMCF of gas. The corrected gravity of the distillate is approximately 60° API.

Cumulative Production

The cumulative production from the three wells completed in the pool is as follows:

<u>Operator and Well</u>	<u>MMCF</u>	<u>Bbls. Dist.</u>
Standard Oil Company of Texas		
Everest No. 1	152	2,426
Martin No. 1	70	852
Pan American Petroleum Corporation		
Flint No. 1	<u>0</u>	<u>0</u>
Pool Total	222	3,278

Economics

The cost to drill and complete a well in the Atoka Pennsylvanian Gas Pool is estimated to be \$170,000. An additional investment of approximately \$8,000 will be required for surface equipment, such as storage tanks and a separator. Net return-on-investment using a 20-year well life is calculated to be 4.1 and 1.48 for 320-acre and 160-acre development, respectively.



STANDARD OF TEXAS-EVEREST NO. 1

1980' FSL & 660' FWL  
Section 14, T-18-S, R-26-E

TD: 10,546'  
PBD: 9,267'  
7" CSA 9370'  
Perf: 9079-9085'  
      9089-9093'  
      9095-9116'  
IPF: 3,472 MCF  
      38 Bbls. Dist.  
      24 Hrs.  
      Natural  
CAOF: 21,000 MCFD

DST:  
Interval: 9067-9130'  
Open 1 Hr. GTS 2 Min.  
Est. F 1,600 MCFD  
Rec. 100' Dist. / 50' Mud  
FP 3500-3675 psi  
30 Min. SIP 3690 psi

DST of Perfs:  
Open 29 Hrs. WBTS 5 Min. GTS 6 Min.  
F 3320 MCFD / 11 Bbls. Dist./MMCF For 24 Hrs.  
TP 2750 psi; 18/64" Choke  
F 6,140 MCFD / 13 Bbls. Dist./MMCF for 5 Hrs.  
TP 2350 psi; 24/64" Choke  
45 Min. SIP 3750 psi

STANDARD OF TEXAS-MARTIN NO. 1

1650' FSL & 1980' FEL  
Section 15, T-18-S, R-26-E

TD: 9086'  
5-1/2" CSA 9086'  
Perf 8966-9018'  
Acid Wash w/500 Gal.  
IPF: 5400 MCFD  
Based on 4-Hr. Test  
Dist. recovery not reported  
CAOF: 43,000 MCFD  
/ 17 Bbls. Dist./MMCF

No DST's

STANDARD OF TEXAS-PAUL TERRY, ET AL, UNIT NO. 1

1980' FNL & 1980' FWL  
Section 15, T-10-S, R-26-E

TD: 9100'  
Plugged and Abandoned

DST's:

Interval: 8890-9100'  
Packer failed

Interval: 8870-9100'  
Open 1 Hr. 30 Min. GTS 12 Min.  
Est. F 215 MCFD  
Recovered 430' GCM  
FP 235 psi  
1 Hr. SIP 3060 psi

Attempted fracture treatment 8494-9100' - Failed.

PAN AMERICAN-FLINT NO. 1

1980' FSL & 1980' FEL  
Section 22, T-18-S, R-26-E

TD: 9263'  
PBD: 9155'  
5-1/2" CSA 9263'  
Perf 9094-9116'  
IPF: 10,540 MCF  
60 Bbls. Distillate  
12 Hrs.  
Natural  
CAOF: 21,000 MCFD  
/ 11 Bbls. Dist./MMCF

DST:  
Interval 9072-9263'  
Open 3-1/2 Hrs. GTS 2 min.  
F 5800 MCFD / 2.75 Bbls. Dist./Hr.  
Rec. 30' Mud / 150' Dist.  
FP 3050 psi  
90 Min. SIP 3735 psi

E X 5

ECONOMIC DATA

	<u>320-Acres</u>	<u>160-Acres</u>
Reserves		
Gas	8,553,000 MCF	4,277,000 MCF
Distillate	94,000 Bbls.	47,000 Bbls.
Price		
Gas	\$0.1075/MCF	\$0.1075/MCF
Distillate	\$2.79/Bbl.	\$2.79/Bbl.
Total Income*		
Gas	\$ 805,000	\$403,000
Distillate	230,000	115,000
Total	\$1,035,000	\$518,000
Rate of Income During Payout*		
Gas	\$101/Day	\$51/Day
Distillate	\$ 30/Day	\$15/Day
Total	\$131/Day	\$66/Day
Operating Expense	\$100/Well/Month	\$100/Well/Month
Investment		
Well Cost	\$170,000	\$170,000
Surface Equipment	8,000	8,000
Total	\$178,000	\$178,000

Taxes Other Than Federal Income Taxes - 10%

\*Based on 7/8 Working Interest

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
PAN AM EXHIBIT No. 5  
CASE 1669

# ECONOMIC CALCULATIONS

PAYOUT:

Investment  
Rate of Return-Operating Expense

320-Acres

$$\frac{\$178,000}{(.90)(\$131/\text{Day})(30.4 \text{ days/Mo.}) - \$100/\text{Mo.}} = \frac{178,000}{3,480} = 51.2 \text{ Months}$$

160 Acres

$$\frac{\$178,000}{(.90)(\$66)(30.4) - \$100} = \frac{178,000}{1,710} = 104 \text{ Months}$$

RETURN ON INVESTMENT (20-Year Life):

Total Income-Investment-Operating Expenses  
Investment

320 Acres

$$\frac{(.90)(\$1,035,000) - \$178,000 - (20 \text{ Yrs.})(12 \text{ Mo/Yr.})(\$100/\text{Mo.})}{\$178,000} = \frac{\$932,000 - \$178,000 - \$24,000}{\$178,000} = \frac{\$730,000}{\$178,000} = 4.1$$

160 Acres

$$\frac{(.90)(\$518,000) - 178,000 - (20)(12)(100)}{178,000} = \frac{466,000 - 178,000 - 24,000}{178,000} = \frac{\$264,000}{\$178,000} = 1.48$$

BEFORE THE  
OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
PAN AM EXHIBIT No. 6  
CASE 1669

ATOKA PENNSYLVANIAN GAS POOL  
EDDY COUNTY, NEW MEXICO

General Information

The Atoka Pennsylvanian Gas Pool was discovered by the completion of Standard Oil Company of Texas J. H. Everest No. 1, which is located 1980' FSL & 660' FWL of Section 14, T-18-S, R-26-E, Eddy County, New Mexico. This well was completed in October, 1957 with a calculated absolute open flow of 21,000 MCFD. While testing, the well also produced distillate with recoveries of 11 to 13 barrels per MCF of gas. Production is from a coarse grained sand found at approximately 9100'. Three successful completions have been realized to date and one non-commercial well has been drilled. A market for this gas has not yet been developed and only relatively small volumes have been produced. This production has been primarily to furnish gas as rig fuel and for drilling other wells in the area.

Pertinent data for the individual wells are attached.

Structural Information

The sand body from which the Atoka Pennsylvanian Gas Pool produces is considered to be a continuous sand trending generally in a northeast-southwest direction. Production is considered to be from a stratigraphic trap in an area of porosity and/or permeability development. The dip of the sand is to the southeast in this area.

Characteristics of the Reservoir Rock and Fluids

The pay has been described on core analyses as a gray, coarse grained sand. Porosity and permeability of the pay in the section of the well where a full hole core was obtained averaged 9.5% and 51 Md., respectively. Log calculations support this porosity average. Distillate recoveries have been reported ranging from 11 to 17 barrels per MCF of gas. The corrected gravity of the distillate is approximately 60° API.

Cumulative Production

The cumulative production from the three wells completed in the pool is as follows:

<u>Operator and Well</u>	<u>MCF</u>	<u>Bbls. Dist.</u>
Standard Oil Company of Texas		
Everest No. 1	152	2,426
Martin No. 1	70	852
Pan American Petroleum Corporation		
Flint No. 1	0	0
Pool Total	222	3,278

Economics

The cost to drill and complete a well in the Atoka Pennsylvanian Gas Pool is estimated to be \$170,000. An additional investment of approximately \$8,000 will be required for surface equipment, such as storage tanks and a separator. Net return-on-investment using a 20-year well life is calculated to be 4.1 and 1.48 for 320-acre and 160-acre development, respectively.



STANDARD OF TEXAS-EVEREST NO. 1

1980' FSL & 660' FWL  
Section 14, T-18-S, R-26-E

TD: 10,546'  
PBD: 9,267'  
7" CSA 9370'  
Perf: 9079-9085'  
9089-9093'  
9095-9116'  
IPF: 3,472 MCF  
38 Bbls. Dist.  
24 Hrs.  
Natural  
CAOF: 21,000 MCFD

DST:  
Interval: 9067-9130'  
Open 1 Hr. GTS 2 Min.  
Est. F 1,600 MCFD  
Rec. 100' Dist. / 50' Mud  
FP 3500-3675 psi  
30 Min. SIP 3690 psi

DST of Perfs:  
Open 29 Hrs. WBTS 5 Min. GTS 6 Min.  
F 3320 MCFD / 11 Bbls. Dist./MMCF For 24 Hrs.  
TP 2750 psi; 18/64" Choke  
F 6,140 MCFD / 13 Bbls. Dist./MMCF for 5 Hrs.  
TP 2350 psi; 24/64" Choke  
45 Min. SIP 3750 psi

STANDARD OF TEXAS-MARTIN NO. 1

1650' FSL & 1980' FEL  
Section 15, T-18-S, R-26-E

TD: 9086'  
5-1/2" CSA 9086'  
Perf 8966-9018'  
Acid Wash w/500 Gal.  
IPF: 5400 MCFD  
Based on 4-Hr. Test  
Dist. recovery not reported  
CAOF: 43,000 MCFD  
/ 17 Bbls. Dist./MMCF

No DST's

STANDARD OF TEXAS-PAUL TERRY, ET AL, UNIT NO. 1

1980' FNL & 1980' FWL  
Section 15, T-18-S, R-26-E

TD: 9100'  
Plugged and Abandoned

DST's:

Interval: 8890-9100'  
Packer failed

Interval: 8870-9100'  
Open 1 Hr. 30 Min. GTS 12 Min.  
Est. F 215 MCFD  
Recovered 430' GCM  
FP 235 psi  
1 Hr. SIP 3060 psi

Attempted fracture treatment 8494-9100' - Failed.

PAN AMERICAN-FLINT NO. 1

1980' FSL & 1980' FEL  
Section 22, T-18-S, R-26-E

TD: 9263'  
PBD: 9155'  
5-1/2" CSA 9263'  
Perf 9094-9116'  
IPF: 10,540 MCF  
60 Bbls. Distillate  
12 Hrs.  
Natural  
CAOF: 21,000 MCFD  
/ 11 Bbls. Dist./MMCF

DST:  
Interval 9072-9263'  
Open 3-1/2 Hrs. GTS 2 min.  
F 5860 MCFD / 2.75 Bbls. Dist./Hr.  
Rec. 30' Mud / 150' Dist.  
FP 3050 psi  
90 Min. SIP 3735 psi