

CASE 3890: Application of PAN AM.
for special pool rules & a non-
standard gas proration unit.

Case Number

3890

Application

Transcripts.

Small Exhibits

ETC.

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

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

October 9, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Pan American
Petroleum Corporation for
special pool rules and a
non-standard gas proration
unit, Eddy County, New Mexico.

Case 3890

BEFORE: Elvis Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3890.

MR. HATCH: Case 3890, application of Pan American Petroleum Corporation for special pool rules and a non-standard gas proration unit, Eddy County, New Mexico.

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

Did I qualify you in the last case?

MR. GEORGE H. FORD: Yes.

MR. UTZ: He's qualified.

MR. BUELL: Thank you. Mr. Examiner, we have a rather unique situation here. The Empire-Penn Gas Pool is a fairly old gas pool. If memory serves me correctly, I believe it was discovered back in 1953. It also may well be the first pool for which this Commission adopted temporary rules. At least, it's the oldest temporary rule order that I've ever located. These temporary rules were adopted in 1953. They were not in the same form that your temporary rule orders are now, and that these orders expired by their own terms at the end of 18 months from the effective date, or the drilling of five wells in the pool, whichever came first.

What I suspect happened, although I don't actually know, shortly after we completed our wells, dry holes were drilled in the area, and apparently, everyone lost interest in

temporary rules because the order was allowed to die by its own terms. No one tried to breathe the life back into it.

The pool rules adopted were for 320-acre units for this Penn production. Of course, as we all know now, for pools discovered after June, 1964, I believe it is, that we have statewide 320 gas units for wells of this depth.

So we're here today for two reasons: One, we're asking the Commission to adopt 320-acre permanent units for this pool as well as approve a non-standard proration unit in order that we may drill another well in this pool and see if we can find the Penn that one well hit and several others have missed.

GEORGE H. FORD,

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

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Ford, you're the same George Ford that was qualified in Case 3873, were you not?

A Yes, sir.

Q All right, sir. In connection with your testimony in Case 3890, I wish you would look first at what has been identified as Pan American's Exhibit No. 1. What is that exhibit?

MR. UTZ: Guy, you have the order number for that first order?

MR. BUELL: Pardon?

MR. UTZ: You have the order number for that first order?

MR. BUELL: Yes. Yes, I do. I have that, Mr. Examiner. It's Order No. R-391 in Case No. 601. The hearing was in October 28, 1953. The action was November 25, 1963.

MR. UTZ: Thank you.

A Yes, sir. Back to Exhibit 1, this is a location or area map of the Empire-Pennsylvanian Gas Pool in Eddy County, New Mexico. I direct your attention, first, to the legend in the lower righthand corner.

The green is for Red Lake Pool Oil Wells. This production is from the Queen-Grayburg-San Andres. I'll have two wells that I'll show you in the center of the Exhibit that have that color that are Penn failures that were completed in the Red Lake. The purple is Empire-Abo. One of the Penn failures is now producing in the Empire-Abo; then, the red color is the Empire-Pennsylvanian Gas Well symbol.

If you'll look about the center of the map in Section 29, Township 17 South, Range 28 East, there is the discovery well for the Empire-Penn gas pool and the only producer up to this time. That is Pan American's State B No. 1 completed in

1953.

Q Mr. Ford, how many dry holes have been drilled in this area hunting this pay?

A There have been five dry holes. Four of these were cored over the Penn interval finding shale and sand and, one case, lime, where the formation was not developed at all insofar as porosity and permeability and good pay. Each of the wells had a drillstem test conducted over the Penn with recovery of water blanket in each case, mud in each case, and in one case, a slight show, and that's the well colored in green in the northeast fourth of the northwest fourth of Section 29. They got 150 feet of slightly gas-cut mud with low pressures. There were discouraging drillstem test results; also, there were no shows on the recovered core.

The well down to the south of the discovery well in the northeast fourth of the northwest fourth of 32 is now an Empire-Abo well.

Then up to the north in Section 20 is a Penn failure that is now a Red Lake well. Then there are two dry holes that I don't have a color on. One is in the southeast fourth of the southeast fourth of 20, and the other is in the southwest fourth of 28.

Now, looking to the west, after we've covered these dry holes, you'll see a bold red and white tape, and just inside

that, a red dot. Pan American and other working interest owners in this proposed unit are willing to make another attempt of this rather elusive target. The Penn formation.

We think there are some possibilities of finding it productive at the location pictured there. That location is 990 from the east line and 990 from the south line of Section 30. The Township and Range are the same in all of these instances, and I won't keep repeating it. That well, we are presently calling Pan American's State V Gas Com #1; State V as in "Victor", Gas Com #1, C-o-m.

Q Mr. Ford, we are, of course, recommending 320-acre unit rules to the Commission and if they adopt them, then this would be a non-standard unit, would it not?

A Yes, sir, it would.

Q At the time we filed our application, we thought the non-standard unit would contain 280 acres. I notice on Exhibit No. 1 it says 286.75 acres. What caused that?

A We later found that what we felt were quarter quarter sections were oversized, were actually what we normally referred to as lots along the west side of Section 30, were arranged 27 and 28, and are divided.

I'd like to give the correct description now. The description we gave in our application was by quarter quarter section and so forth. The description would be lot 3, and 4,

and southeast fourth of southwest fourth and southeast fourth of Section 30. Those lots would be numbered along the west side of Section 30, starting at the top at the north as one, two, three, four; three and four in our proposed non-standard unit.

MR. BUELL: May it please the Examiner, in view of this development, it may be best to readvertise this case. I'm not too concerned about it because, actually, we're going more in the direction of a standard unit than the one that was advertised, than if it was going from 280 acres to 286.75, but --

MR. UTZ: Let me clarify this. What did you request in your ad?

THE WITNESS: We described a 280 non-standard unit by quarter quarter sections. We called it southeast fourth; that stays the same. Then, we said south half of southwest fourth; that description now is lot 4 and southeast fourth of southwest fourth. Then, we went on to the northwest fourth of southwest fourth; that's now lot 3.

MR. UTZ: Or the lots you just described in the quarter quarter sections?

THE WITNESS: Yes, sir. I really think that's satisfactory, myself.

MR. UTZ: I don't think that you have any problem,

myself.

THE WITNESS: I'm just trying --

MR. UTZ: We do it all the time.

MR. BUELL: I don't think that's necessary, or, you, Mr. Hatch?

MR. HATCH: No, except the acreage was given in the ad. I don't think it will require readvertising.

MR. BUELL: I don't think so.

MR. UTZ: How much is the acreage now?

THE WITNESS: 286.75, and I have it in brackets under the unit name on Exhibit One.

MR. UTZ: Six and three-quarter acres?

THE WITNESS: Yes, sir.

MR. BUELL: Or in the direction of a standard unit.

MR. UTZ: We'll kick it around a little bit.

Q (By Mr. Buell) All right, sir, let's talk about the forty acre hole in this unit. What's the situation there, Mr. Ford?

A We can describe that as the northeast fourth of the southwest fourth of Section 30. The situation is this: Tenneco and Conoco each have fifty per cent of the working interest in this forty acres.

Q Did we approach them to get their voluntary joinder to this proposed unit?

A Yes, we did, and we found from them that this forty acres, as well as a much larger package of property, is subject to a production payment.

Q A rather large one?

A Well, it ranges from 85 to 95 per cent, depending on certain terms. I believe that those terms are, what is the cost to operate the property, so that there will be just enough to go to the production payment owner to leave a residual that will pay for operations which, I believe, is necessary to satisfy some tax problems.

Q What did they say when we asked them to join?

A They said they couldn't afford to join and I can understand how they can't afford to join if they have nothing left after paying the basic royalty, the production payment owner, and their operating expenses. They could get no return on their investment in drilling a very expensive well somewhere in the range of \$200,000 until the entire production payment were payed out. As I understand, this is a purchase of Delhi-Taylor properties, and I don't have any idea of when the production payment might pay out, but usually, they run a very long term. It could run longer than the producing life of this well.

Q So by the same logic, then, Mr. Ford, it would be impossible, economically speaking, for the working interest

owners who voluntarily agreed to drill this well to, say, force pool this forty acre track as a unit?

A Yes, sir, and if I may express this opinion, I don't really think it would be fair to the working interest owners in the 280 or so acres to have to suffer the burden of paying production payment on forty acres if they had no interest in and had no part in getting it in that shape of having the production payment.

Q It is pretty obvious from Exhibit One and the many dry holes that this is a high risk well?

A Yes, sir, it is.

Q Is it also a very expensive well to drill?

A Yes, sir, on the order of, I believe it is a hundred and eighty thousand dollars, with our most conservative estimate of what it might cost us to make a producer.

Q All right, sir. We talked about the working interest owners and the production payment on their interest on this forty acres that's not in the unit. Let me ask you now about the basic royalty. What is the situation there?

A The entire south half of Section 30 which might go into a standard unit, the basic royalty is owned by the state, so the basic royalty would be paid to the state in the same amount, regardless of whether we have a standard or a non-standard unit.

Q So from the standpoint of protecting the correlative rights of the basic royalty owner, that will occur under your recommendation to this Commission?

A Yes, sir.

Q All right, sir. Do you have any other comments on Exhibit One?

A Well, I have a trace of a cross section to three wells.

Q Are you ready to go into it, now?

A Yes, sir.

Q I believe that's been identified as Exhibit Number Two, Mr. Ford. Would you comment very briefly on it, please?

A All right, sir. Very briefly, it's logs on three wells, electric logs. The wells are identified up at the top of the logs.

The log on the left was drilled as a Penn test by Buffalo Oil Company as Delhi State Number One. The identification I have there now is the present identification for this well as a Red Lake producer.

Down at the bottom of the log is the completion information on the well, on each one of the wells. I direct your attention, first, to the middle log, the log on the discovery well and the only producer in the Empire-Penn field. You'll see the Penn formation. We're calling that zone, where the

perforations are, a morrow portion of the Penn; so, above that is a morrow correlative marker.

If you go to the log on the left, you'll see that the marker is there but the morrow zone is not developed. It's been shaled out and we got no recovery except mud on drillstem test.

When we go over to the right, the zone is almost shaled out. It's not as thick as it was in the discovery well. I examined the logs on the well. It appeared to be much more shaley. The core results got sand and shale.

The drillstem test recovery was only mud. No show of water, although the laterolog indicated it might be very high in water content. At least, we were not able to make a completion on that well.

Really, about all this cross section shows is that if we had 320 acres developed and present insofar as sand and porosity permeability, we could most probably drain it. The only impediment to communication is the zone disappearing, and we hope it appears over in Section 30 where we plan to drill our next well.

Q Based on performance of the discovery well, it does appear to you, as a reservoir engineer, does it not, that one well, if it has three hundred and twenty productive acres, will effectively and efficiently drain it?

A Yes, sir. This microlog on this well indicates a very dead clean sand development. There's about seventy feet of which we refer to as railroad tract porosity in this well. It looks very good. The well potentialed there for thirty million. It's been producing since 1953. It's produced seventeen BCF of gas. It's still producing at a fairly high rate. So, it's my opinion that the well would drain three hundred twenty acres or more if the reservoir were there for it to drain.

Q All right, sir. Do you have any other comments on Exhibit Two?

A No, sir.

Q Let's move along, then, to Exhibit Number Three. What is that Exhibit?

A Exhibit Three is pertinent completion data and, actually, all the pertinent information I could find for the field, it's information obtainable upon Pan American State B. That's unit number one. I have already mentioned it was discovered in August of '53. That's number one.

Item eight, cumulative production of seventeen billion cubic feet to August 1, 1968, along with 225,000 barrels of condensate. That's all I have on Exhibit Three.

Q All right, sir. Exhibit Four, what is that Exhibit?

A Exhibit Four is simply a tabulation for the

Examiner's convenience of production of gas and condensate, and cumulative production is by years from '54 to '64, and then by months, from '65 on up to July of 1968.

Q All right, sir. Would you briefly summarize your recommendation and Pan American's recommendation to the Commission in this case?

A I recommend that permanent field rules be adopted for the Empire-Penn gas pool. My reasons for recommending permanent without having any drainage date other than an opinion or just what you stated in your opening statement as what the Commission thought was proper for this field back in '53 and what they think is proper now for all fields in southeast New Mexico that are down to the Penn or deeper, we've had a notice and we've had a hearing here and, so far, no one had indicated any protest for the 320 acre rules for this purpose. If the Commission sees fit and has to have some drainage date, we, perhaps, could come back later and show that. If so, we'd ask for temporary rules for just as long a period as they would give us, eighteen months, two years, or even a year if they won't go any longer than that.

Q But actually, we're only asking for what wells of depth would get right now under general or statewide rules?

A Yes, sir.

Q What is your recommendation as to the standard

well location for these units?

A On the 320 acre unit, with the standard well location being in the northwest quarter of the southeast quarter, not closer than 990 feet from the outer boundary of the quarter section. This is the location that was in the old rules for the Empire-Penn and we thought that was perfectly satisfactory and are recommending it.

Q Does the well that we hope to drill fall at a standard location?

A Yes, sir. It does. It's 990 out at the corner, the southeast corner. Part of the old rules contain the provision and we're recommending that provision for the rules we're recommending today for administrative approval of 200 foot variation in well location due to topographic conditions.

Now, that's the remainder of the rules I'd recommend, are standard, and all the Commission rules, and I won't go into those what I think are fairly minor points. I believe I made my recommendation on the non-standard unit, also.

Q Do you have anything else you care to add at this time?

A No, sir.

MR. BUELL: May it please the Examiner, that's all we have by way of direct testimony. I would like to formally offer our Exhibits One through Four, inclusive.

MR. UTZ: Exhibits One through Four will be entered into the record in this case.

(Whereupon, Applicant's Exhibits One through Four, inclusive, were admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Now, the exceptions to the old order that you offered here, was it 200 topographical, or was that in the order?

A Yes, sir, that was in the order.

Q That was in the order?

A Yes, sir.

Q Were there any exceptions? Are you requesting anything other than what was in the old order, is what I'm trying to say.

A No, sir, except for the usual provisions about a well being completed within a mile of the pool, being in this pool. That's really all the minor points I can think of.

Q So what you're actually requesting then is the old order be updated?

MR. BUELL: Yes, sir. That would be fine.

A Yes, sir. I notice the old order, of course, had the casing and cementing program and that would be fine for these permanent rules that we're recommending now.

Q All right, sir. Now, this item number five, is that permeability or porosity?

MR. BUELL: On Exhibit Three?

MR. UTZ: Exhibit Three.

A That is the porosity calculated by logs and we don't have a permeability figure.

Q You have no idea other than it's a big well, so it must be pretty good.

A Yes, sir.

Q Do you have a recent bottom hole pressure or surface pressure, either one?

A Yes. July 10, 1968, a seventy-two hour shut-in pressure of 1833.

Q And the well is how deep? Around 10,000.

A Around 10,000. Plugged back, around 10,270.

Q The weight of the column gas may not be too much, about 200 pound weight of column for --

A We went through a calculation on this and came out with 2430 using some reasonable factors to get the bottom hole conditions.

MR. UTZ: Are there other questions of the witness? He may be excused. Does anyone have any statements in this case? The case will be taken under advisement and we'll take a fifteen-minute recess.

MR. BUELL: Mr. Examiner, I would like to express our appreciation for your courtesy and consideration in letting us put our two cases on together, as well as for the consideration of others who have been waiting to put their cases on, and we sincerely appreciate it.

I N D E X

| <u>WITNESS</u> | <u>PAGE</u> |
|---------------------------------|---------------|
| GEORGE H. FORD | |
| Direct Examination by Mr. Buell | 3 |
| Cross Examination by Mr. Utz | 16 |
| | |
| <u>EXHIBIT</u> | <u>MARKED</u> |
| Applicant's 1 through 4 | |
| | 16 |

OFFERED AND
ADMITTED

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

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

Charlotte Macias
 Court Reporter

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Executive hearing of case no. 3890
 heard by the Commission on 10/6/68.

Theresa G. Galt, Secretary
 New Mexico Oil Conservation Commission

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

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

October 22, 1968

Mr. Guy Buell
Pan American Petroleum Corporation
Post Office Box 1410
Fort Worth, Texas 76101

Re: Case No. 3890
Order No. R-3529
Applicant:
Pan American Petroleum Corp.

Dear Sir:

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

Very truly yours,

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

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC X

Artesia OCC X

Aztec OCC

Other _____

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3890
Order No. R-3529

APPLICATION OF PAN AMERICAN PETROLEUM
CORPORATION FOR SPECIAL POOL RULES AND
A NON-STANDARD GAS PRORATION UNIT, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

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

NOW, on this 22nd day of October, 1968, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Pan American Petroleum Corporation,
seeks the promulgation of special rules and regulations for the
Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, including
a provision for 320-acre spacing units and specified well loca-
tions.

(3) That the applicant further seeks approval of a non-
standard gas proration unit comprising Lots 3, 4, SE/4 SW/4, and
SE/4 of Section 30, Township 17 South, Range 28 East, NMPM, Empire-
Pennsylvanian Gas Pool, Eddy County, New Mexico, to be dedicated
to its State V Com Well No. 1, to be located 990 feet from the
South line and 990 feet from the East line of said Section 30.

-2-

CASE No. 3890

Order No. R-3529

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, special rules and regulations providing for 320-acre spacing units should be promulgated for the Empire-Pennsylvanian Gas Pool.

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

(6) That the proposed non-standard gas proration unit should be approved and dedicated to the Pan American Petroleum Corporation State V Com Well No. 1.

IT IS THEREFORE ORDERED:

That Special Rules and Regulations for the Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
EMPIRE-PENNSYLVANIAN GAS POOL

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

RULE 2. Each well shall be located on a standard unit consisting of approximately 320 acres which shall comprise any two contiguous quarter sections of a single governmental section, being a legal subdivision (half section) of the United States Public Lands Survey. For purposes of these rules, a unit consisting of between 316 and 324 contiguous surface acres shall be considered a standard unit.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and

-3-

CASE No. 3890

Order No. R-3529

hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a single governmental section and contains less acreage than a standard unit.
- (c) 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 the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located in the northwest quarter or the southeast quarter of the section and shall be located no nearer than 790 feet to the outer boundary of the quarter section and no nearer than 130 feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no nearer than 330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox

-4-

CASE No. 3890
Order No. R-3529

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

RULE 6. Each well shall be cased and cemented as follows:

(a) Surface Pipe

The surface pipe shall be set through all shallow potable water-bearing beds, and a sufficient amount of cement shall be used to circulate the cement behind the pipe to the bottom of the cellar.

(b) Intermediate String

The intermediate string of casing shall be set through the shallow oil-producing beds in the area, and in no event shall be set higher than the top of the San Andres formation and a sufficient amount of cement used to circulate the cement to the base of the surface casing.

(c) Production String

The production string shall be set no higher than the top of the producing formation, and a sufficient amount of cement shall be used to circulate the cement to a point above the top of the Wolfcamp producing formation encountered in the area at an approximate depth of 7,000 feet. An alternate cementing method may be employed using a two-stage tool, provided that the method is satisfactory to the District Oil and Gas Inspector.

IT IS FURTHER ORDERED:

(1) That a non-standard gas proration unit comprising Lots 3, 4, SE/4 SW/4, and SE/4 of Section 30, Township 17 South, Range 28 East, NMPM, Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, is hereby approved and dedicated to the Pan American

-5-

CASE No. 3890
Order No. R-3529

Petroleum Corporation State V Com Well No. 1, to be located 990 feet from the South line and 990 feet from the East line of said Section 30.

(2) That the locations of all wells presently drilling to or completed in the Empire-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof are hereby approved; that the operator or any well having an unorthodox location shall notify the Artesia District Office of the Commission in writing of the name and location of the well on or before November 15, 1968.

(3) That any operator desiring to dedicate 320 acres to a well presently drilling to or completed in the Empire-Pennsylvanian Gas Pool shall file a Form C-102 with the Commission on or before November 15, 1968.

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

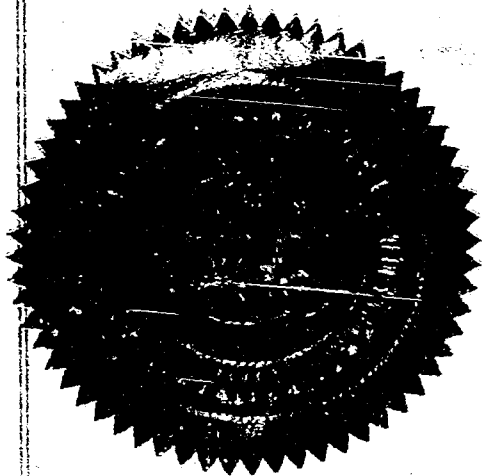
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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



esr/

STATE "B" GAS UNIT NO. 1

1. Discovery Date: August 24, 1953
2. Initial Potential: CAOF = 30 MMCFPD
+ 24 BCPD
3. TD = 12,341
4. PBD = 10,270
5. ϕ = 7.5% (log)
6. Sw = 20%
7. Gas-Liquid Ratio
July 1968 - 132,000 CF/BC
Ave. over life of well = 73,000 CF/BC
8. Cumulative Production 8-1-68 = 17,049,674 MCF
224,941 BC
9. Gas Gravity = 0.638
10. Specific Gravity Liquid = 0.753
Gravity Liquid = 59.6° API
11. Abandonment Pressure = 500 psi
12. Original BHP = 4068 psi (-6420)
13. BHT = 154°

7-10-68
72 hrs / 833 3.14
13.000 - 24,000 B, 15.12

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
PanAm's EXHIBIT NO. 3
CASE NO. 3890

TABULATION OF PRODUCTION
EMPIRE PENNSYLVANIAN GAS POOL
EDDY COUNTY, NEW MEXICO

| Year/ Month | (MCF) Gas Production | Cum. Gas Production (MCF) | Bbls. Cond. Production | Cum. Cond. Production (Bbl.) |
|----------------|----------------------------|-----------------------------------|------------------------------|--|
| 1954 | 664,844 | 664,844 | 15,005 | 15,005 |
| 1955 | 605,852 | 1,270,696 | 25,078 | 40,083 |
| 1956 | 1,213,716 | 2,484,412 | 20,383 | 60,466 |
| 1957 | 1,111,892 | 3,596,304 | 18,080 | 78,546 |
| 1958 | 796,049 | 4,392,353 | 12,303 | 90,849 |
| 1959 | 716,620 | 5,108,973 | 12,363 | 103,212 |
| 1960 | 1,348,308 | 7,338,381 | 19,916 | 123,128 |
| 1961 | 1,581,315 | 8,919,696 | 20,459 | 143,587 |
| 1962 | 1,308,267 | 10,227,963 | 16,024 | 159,611 |
| 1963 | 1,348,919 | 11,576,882 | 14,653 | 174,264 |
| 1964 | 1,586,598 | 13,163,480 | 17,495 | 191,759 |
| <u>1965</u> | | | | |
| Jan. | 193,643 | | 1,897 | |
| Feb. | 152,590 | | 1,258 | |
| Mar. | 129,095 | | 874 | |
| Apr. | 118,082 | | 1,046 | |
| May | 158,970 | | 1,472 | |
| June | 152,364 | | 1,413 | |
| July | 123,385 | | 1,078 | |
| Aug. | 104,580 | | 997 | |
| Sept. | 72,173 | | 623 | |
| Oct. | 93,040 | | 847 | |
| Nov. | 75,202 | | 683 | |
| Dec. | 101,479 | 14,638,083 | 862 | 204,809 |
| <u>1966</u> | | | | |
| Jan. | 129,030 | | 1,103 | |
| Feb. | 124,962 | | 1,200 | |
| Mar. | 142,575 | | 1,364 | |
| Apr. | 154,994 | | 1,332 | |
| May | 44,791 | | 329 | |
| June | 92,999 | | 799 | |
| July | 127,438 | | 1,075 | |
| Aug. | 108,157 | | 944 | |
| Sept. | 112,371 | | 1,008 | |
| Oct. | 111,043 | | 1,002 | |
| Nov. | 102,380 | | 919 | |
| Dec. | 106,915 | 15,995,738 | 865 | 216,749 |

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Pan Am's EXHIBIT NO. 4
CASE NO. 3890

| <u>Year/ Month</u> | <u>(MCF) Gas Production</u> | <u>Gas Production</u> | <u>Bbls. Cond. Production</u> | <u>Cum. Cond. Production</u> |
|------------------------|-------------------------------------|---------------------------|---------------------------------------|--------------------------------------|
| <u>1967</u> | | | | |
| Jan. | 120,636 | | | |
| Feb. | 80,820 | | 982 | |
| Mar. | 126,314 | | 602 | |
| Apr. | 140,703 | | 1,125 | |
| May | 135,001 | | 1,125 | |
| June | 35,541 | | 1,017 | |
| July | 16,726 | | 254 | |
| Aug. | 60,135 | | 101 | |
| Sept. | 86,944 | | 377 | |
| Oct. | 16,799 | | 632 | |
| Nov. | 118,412 | | 152 | |
| Dec. | 39,246 | 16,973,015 | 961 | |
| | | | 275 | 224,352 |
| <u>1968</u> | | | | |
| Jan. | 2,358 | 16,975,373 | 5 | 224,357 |
| Feb. | 9,753 | 16,985,126 | 23 | 224,380 |
| Mar. | 33,292 | 17,018,418 | 339 | 224,719 |
| Apr. | 3,496 | 17,021,914 | 27 | 224,746 |
| May | 2,328 | 17,024,242 | 18 | 224,764 |
| June | 2,420 | 17,026,662 | 3 | 224,767 |
| July | 23,012 | 17,049,674 | 174 | 224,941 |

- Empire Perm Gas Pool -

Mr. Wells -

Pan American

Eddy

320

990 from outside boundary

200 foot for top.

- NW or SE -

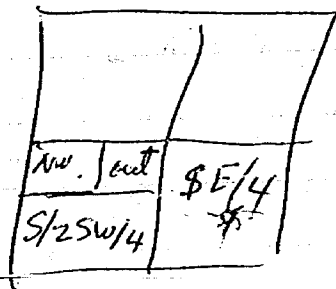
Approval of a non-Standard 280
unit -

Pan Am

gas
280

Sec 30 S/2, T 17S, R 28E,

SE/4, and SW/4 less the NE/4



990 of FS 990 FEL

State ^V~~B~~ Com # 1

footage

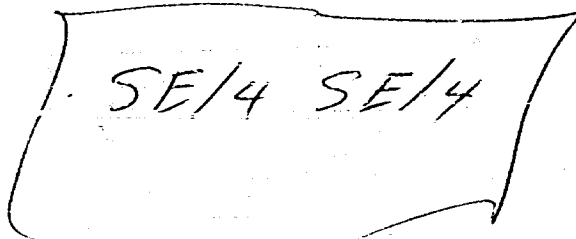
Sec

T

R

Pool

County



Case 3880

Heard 10-9-68

Rec. 10-11-68

Grant Pan Am's request for
Special pool Rules for the
Empire-Penn Gun pool.

A copy of the old order 391
is attached however it seems
to me that the Alaska-Penn.
order R-1670E should be used as
a type order. The casing
provisions of R-391 probably
should be used.

Also grant a NSP for
2 86.25 A c. consisting of
Lots 3 & 4, SE SW, SE 1/4, sec.
30-175-28E.

Thurman

PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING P. O. BOX 1410

D. L. RAY
DIVISION ENGINEER

FORT WORTH, TEXAS—76101

September 23, 1968

File: GHF-495-986.510.1

Case 3890

Subject: Field Rules and Non-Standard
Unit Hearing
Empire (Pennsylvania) Gas Pool
Eddy County, New Mexico

*DMG
file*

New Mexico Oil Conservation Commission (3)
Post Office Box 871
Santa Fe, New Mexico 87501

Gentlemen:

Reference is made to the telephone conversation of September 20, 1968, between Mr. Wells of this office and your Mr. George Hatch. This is to confirm Pan American Petroleum Corporation's request that a case be docketed for the October 9, 1968, NMOCC Hearing to consider the adoption of field rules for the Empire (Pennsylvanian) Pool in Eddy County, New Mexico. Also, a request will be made for approval of a non-standard 280 acre unit in the subject field.

Field rules to be requested will include the following:

1. 320 acre units consisting of two governmental quarter sections.
2. Standard well location to be in the NW or SE quarter section not closer than 990' from the outer boundary of the quarter section.
3. Administrative approval of 200' variation in well location due to topographic conditions.

The non-standard unit for which approval will be requested is described as follows:

280 acres, including the southeast quarter of Section 30, the south half of the southwest quarter of Section 30, and the northwest quarter of the southwest quarter of Section 30 in T-17-S, R-28E, Eddy County, New Mexico.

Yours very truly,

D. L. Ray ghf

WCW:jn

SEP 24 1968

DOCKET MAILED

9-26-68

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION)
OF PAN AMERICAN PETROLEUM COR-)
PORATION FOR SPECIAL POOL RULES)
AND A NONSTANDARD GAS PRORATION)
UNIT, EDDY COUNTY, NEW MEXICO.)

No. 3890

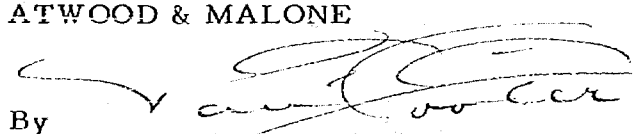
ENTRY OF APPEARANCE

The undersigned attorneys, duly licensed to practice law in the
State of New Mexico, hereby enters their appearance in this cause as
New Mexico counsel for Pan American Petroleum Corporation.

DATED at Roswell, New Mexico, this 5th day of October, 1968.

ATWOOD & MALONE

By


P. O. Drawer 700
Roswell, New Mexico

63 OCT 7 1968

Docket No. 29-58

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 9, 1968

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

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

- CASE 3872: Application of Union Oil Company of California for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to equally complete its Federal "A" Well No. 1 located in Unit P of Section 12, Township 15 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Morton-Wolfcamp Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the San Andres and such other formations as may occur in the open-hole interval from approximately 4620 to 7350 feet.
- CASE 3873: Application of R. G. McPheron for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the open-hole interval from approximately 5250 feet to 5854 feet in his S. P. Johnson Well No. 1 located 990 feet from the West line and 1650 feet from the South line of Section 5, Township 18 South, Range 39 East, South Carter-San Andres Pool, Lea County, New Mexico.
- CASE 3874: Application of Gulf Oil Company - U. S. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Paddock and Blinbry Oil Pools in the well-bore of its C. L. Hardy Well No. 2 located in Unit N of Section 20, Township 21 South, Range 37 East, Lea County, New Mexico, with the provision that no more than one single allowable will be produced from said well.
- CASE 3875: Application of Pan American Petroleum Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well in exception to the Fowler-Ellenburger Rules at an unorthodox location 910 feet from the North line and 1980 feet from the West line of Section 15, Township 24 South, Range 37 East, Lea County, New Mexico.

- CASE 3876: Application of Newmont Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Young (Queen) Unit Area comprising 1320 acres, more or less, of federal and state lands in Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3877: Application of Newmont Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Young (Queen) Unit Area by the injection of water into the Queen formation through 17 wells located in Sections 9, 16, 17, 19, 20, 21, and 29, Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3878: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand through two injection wells located in Unit M of Section 8, and Unit G of Section 17, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.
- CASE 3879: Application of Walter Duncan Oil Properties for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox oil well location 1000 feet from the North line and 1242 feet from the East line of Section 36, Township 32 North, Range 18 West, San Juan County, New Mexico. Said well would be projected to the Dakota formation.
- CASE 3880: Application of Anne Burnett Windfohr, dba Windfohr Oil Company, for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated interval from approximately 6970 feet to 7028 feet in the Windfohr Oil Company Jackson "B" Well No. 23 located in Unit J of Section 24, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico.
- CASE 3881: Application of J. M. Huber Corporation for the creation of a new oil pool and for special pool rules, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian oil pool for its Lone Star Federal Well No. 1 located in the NE/4 NE/4 of Section 20, Township 8 South, Range 36 East, Roosevelt County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre proration units.

October 9, 1968 - Examiner Hearing
-3-

Docket 29-68

- CASE 3882: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Teague Blinebry Pool, Lea County, New Mexico.
- CASE 3883: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Imperial Tubb-Drinkard Pool, Lea County, New Mexico.
- CASE 3884: Application of Marathon Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Miller Ranch Unit Area comprising 5,276 acres, more or less, of State, Federal and Fee lands in Townships 21 and 22 South, Range 25 East, Eddy County, New Mexico.
- CASE 3885: Application of Sinclair Oil & Gas Company for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Turner "B" Grayburg-Jackson Waterflood Project, Grayburg-Jackson Pool, by the conversion to water injection of 12 additional injection wells located in Sections 20, 29, and 30, Township 17 South, Range 31 East, Eddy County, New Mexico.
- CASE 3886: Application of Sinclair Oil & Gas Company for the amendment of a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks amendment of its Guadalupe Ridge Unit Agreement, unitizing certain lands in Eddy County, New Mexico, and approved by Order No. R-3471, to conform to certain requirements of the Director of the United States Geological Survey. In the absence of objection, the case will be submitted and an order issued upon the basis of the application and exhibits attached thereto.
- CASE 3887: Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand of the Grayburg formation through two wells to be located in Units E and K of Section 12, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. Applicant further proposes to produce oil from the Upper Grayburg through parallel strings of tubing, if said zones are productive in the subject wells.

October 9, 1968, Examiner Hearing
-4-

Docket No. 29-68

CASE 3888: Application of Amerada Petroleum Corporation for a dual completion, salt water disposal and tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its State E "B" Well No. 1 located in Unit E of Section 27, Township 10 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the North Echols-Devonian Pool and the disposal of produced salt water through the tubing-casing annulus into the San Andres formation through perforations in said casing from approximately 5220 feet to 5250 feet. Applicant also seeks an exception to the tubing requirements of Commission Rule 107 in that said tubing would be set more than 250 feet above the upper most Devonian perforation.

CASE 3889: Application of BTA Oil Producers for the creation of a new pool and special pool rules, Lea and Roosevelt Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Bough C zone of the Pennsylvanian formation for its well located in Section 5, Township 9 South, Range 36 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 160-acre proration units and for the assignment of an 80-acre allowable factor of 4.77.

CASE 3890: Application of Pan American Petroleum Corporation for special pool rules and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, including a provision for 320-acre spacing units with wells to be located in either the northwest quarter or the southeast quarter of the section. Applicant further seeks approval of a 280-acre non-standard gas proration unit comprising the SE/4, S/2 SW/4, and the NW/4 SW/4 of Section 30, Township 17 South, Range 28 East, Empire-Pennsylvanian Gas Pool, to be dedicated to its State V Com Well No. 1 located 990 feet from the South and East lines of said Section 30.

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. 601
Order No. R-391

THE MATTER OF THE APPLICATION OF
STANOLIND OIL AND GAS COMPANY FOR
A TEMPORARY ORDER ESTABLISHING
UNIFORM 320-ACRE SPACING PATTERN
AND 320-ACRE PRORATION UNITS IN THE
COMMON SOURCE OF SUPPLY DISCOVERED
IN STANOLIND'S STATE 'AB', WELL NO. 1,
NW/4 SE/4 SECTION 29, TOWNSHIP 17 SOUTH,
RANGE 28 EAST, NMPM, EDDY COUNTY, NEW
MEXICO.

TEMPORARY ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 28, 1953, 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 November, 1953, the Commission, a quorum being present, having considered the testimony adduced and 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 a common source of supply of gas was discovered by the Stanolind Oil and Gas Company's No. 1, State 'AB', located 1980 feet from the South and east lines of Section 29, Township 17 South, Range 28 East, NMPM, Eddy County, New Mexico; the well being completed at a plugged-back depth of 10,270 feet through casing perforations 10,102 to 10,127 in a basal Pennsylvanian sand, the well having an initial open-flow potential of 30 million cubic feet of gas per day.

(3) That geological and engineering data now available to the Commission indicate that one well will apparently drain 320 acres, and that this common source of supply should be developed on 320-acre proration units for a period of 18 months from date of entry of this order, or until five wells shall have been completed, whichever date is sooner.

(4) That the common source of supply discovered by the aforementioned well should be designated as the Empire-Pennsylvanian Gas Pool, and should cover the following described area in Eddy County, New Mexico:

Township 17 South, Range 28 East, NMPM
S/2 Section 19, S/2 Section 20,
S/2 Section 21, S/2 Section 22,
all Sections 27 through 34, incl.

Township 18 South, Range 28 East, NMPM
N/2 Section 3, N/2 Section 4,
N/2 Section 5, N/2 Section 6

(5) That certain rules should be adopted to adequately protect freshwater zones in the area, and the shallow oil-producing horizons now productive in the Empire, Red Lake and Artesia Pools.

(6) That operators in the pool should submit certain geological and engineering data upon completion of each well in the pool.

IT IS THEREFORE ORDERED:

That the application of Stanolind Oil and Gas Company be, and the same hereby is in part approved, as follows:

(1) That a new pool be, and the same hereby is created, designated for gas production, denominated the Empire-Pennsylvanian Pool, Eddy County, New Mexico, and described as follows:

Township 17 South, Range 28 East, NMPM
S/2 Section 19, S/2 Section 20,
S/2 Section 21, S/2 Section 22,
all Sections 27 thru 34, incl.

Township 18 South, Range 28 East, NMPM
N/2 Section 3, N/2 Section 4
N/2 Section 5, N/2 Section 6

(2) That effective on the date of this order, the following rules and regulations shall apply to wells hereafter drilled, completed or recompleted in the Empire-Pennsylvanian Gas Pool, defined herein, in addition to the Commission's applicable rules, regulations and orders heretofore or hereafter adopted to the extent not in conflict herewith:

SPECIAL POOL RULES
EMPIRE-PENNSYLVANIAN GAS POOL

SECTION A. No well shall be drilled or completed or recompleted, and no Notice of Intention to Drill or drilling permit shall be approved, unless,

- (a) Such well be located on a designated drilling unit of not less than 320 acres of land, more or less, according to legal subdivision of the United States Land Surveys, in which unit all the interests are consolidated by pooling agreement or otherwise and on which no other well is completed, or approved for completion, in the pool;

- (b) Such drilling unit be in the shape of a rectangle except for normal variations in legal subdivisions of the United States Land Surveys, the north half, south half, east half or west half of each section of land constituting a drilling unit;
- (c) Such well shall be located 990 feet from the outer boundary of either the northwest or southeast quarter of the section, subject to variation of 200 feet for topographic conditions. Further tolerance shall be allowed by the Commission only in cases of extremely rough terrain, where compliance would necessarily increase drilling costs.

SECTION B.

Proration Units: The proration unit shall consist of 320 acres or a legal United States Land Office Survey half-section, and the approximate 320 acre unit shall follow the usual legal subdivision of the General Land Office Section Surveys.

- (a) The pooling of properties of parts thereof shall be permitted, and if not agreed upon may be required in any case when and to the extent that the smallness or shape of a separately owned tract would, under the enforcement of the uniform spacing plan of proration units, otherwise deprive or tend to deprive the owner of such tract of the opportunity to recover his just and equitable share of the natural gas in the pool; provided that the owner of any tract that is smaller than the drilling unit establishment for the field shall not be deprived of the right to drill on and produce from such tract if same can be done without waste; but in such case the allowable production from such tract, as compared with the allowable production therefrom if such tract were a full unit, shall be in the ratio of such tract to the area of a full unit of 320 acres.

SECTION C.

Casing and Cementing Program.

- (a) Surface Pipe:

The surface pipe shall be set through all shallow potable water-bearing beds, and a sufficient amount of cement shall be used to circulate the cement behind the pipe to the bottom of the cellar.

- (b) Intermediate String:

The intermediate string of casing shall be set through the shallow oil-producing beds in the area, and in no event shall be set higher than the top of the San Andres formation and a sufficient amount of cement used to circulate the cement to the base of the surface casing.

(c) Production String:

use

The production string shall be set no higher than the top of the producing formation, and a sufficient amount of cement shall be used to circulate the cement to a point above the top of the Wolfcamp producing formation encountered in the area at an approximate depth of 7,000 feet. An alternate cementing method may be employed using a two-stage tool, provided that the method is satisfactory to the District Oil and Gas Inspector.

SECTION D.

GEOLOGICAL AND ENGINEERING DATA.

- ME*
- (a) Upon completion of each well within the defined limits of the Empire-Pennsylvanian Gas Pool, each operator shall submit to the District Office of the Commission at Artesia two copies of either an electric log or sample log showing thereon the estimated formation tops as encountered in the well. In the event that the producing formation is cored in the well and a core analysis made, two copies of this analysis shall also be submitted to the Commission.

PROVIDED, HOWEVER, That the above rules and regulations shall remain in full force and effect for a period of at least 18 months, or until five wells are drilled to the producing formation of the Empire-Pennsylvanian Pool.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

R. R. SPURRIER, Member and Secretary

S E A L

BOTTOM HOLE PRESSURE & GAS RESERVE DATA

HARVEY E. YATES - SINGER "C" #1

Initial Bottom Hole Pressure at 10,000' was 4,435 psig.

Shut-in Bottom Hole Pressure taken at 10,000' on April 21, 1967 was 2,178 psig.

Gas produced to April 21, 1967 was 2,818,494 MCF.

This is equivalent to 1,249 MCF of gas production per pound pressure drop.

Remaining gas reserves to 1,000 psi. bottom hole pressure is 1,471,322 MCF.

Estimated ultimate gas recovery is 4,289,816 MCF.

Exhibit #6

ULTIMATE PAYOUT STATUS
McMILLAN-MORROW GAS AREA
ENDY COUNTY, NEW MEXICO

| <u>WELL</u> | <u>GROSS RECOVERABLE GAS-MCF</u> | <u>W. I. RECOVERABLE GAS-MCF</u> | <u>W. I. DIST. -BBLs.</u> | <u>ULT. W. I. INCOME GAS & DISTILLATE</u> | <u>TOTAL COST</u> | <u>WORKING INTEREST PROFIT OR LOSS ()</u> |
|-------------------------------------|--|--|-------------------------------|---|-----------------------|--|
| Yates - Pecos River Deep Unit #1 | 191,856 | 163,000 | 430 | \$ 22,235 | \$310,000 | (\$287,765) |
| Yates - Pecos River Deep Unit #3 | 1,042,317 | 885,000 | 4,300 | \$125,499 | \$310,000 | (\$184,501) |
| Harvey Yates - Singer "A" #1 | 33,555 | 28,500 | 79 | \$ 3,897 | \$310,000 | (\$306,103) |
| Harvey Yates - Singer "C" #1 | 4,289,816 | 3,640,000 | 19,600 | \$520,828 | \$310,000 | \$210,828 |
| Total 4 wells are expected to lose | | | | | | \$567,541 |

Exhibit #7

Assume recoverable gas is 469 MCF/Ac. Ft.

Assume drainage is 640 acres.

Net feet of pay to drain recoverable gas would be as follows:

Pecos River Deep Unit #1 - - - .64 feet

Pecos River Deep Unit #3 - - - 3.47 feet

Harvey Yates - Singer "A" #1 - - .11 feet

Harvey Yates - Singer "C" #1 - - 14.29 feet

Exhibit #8

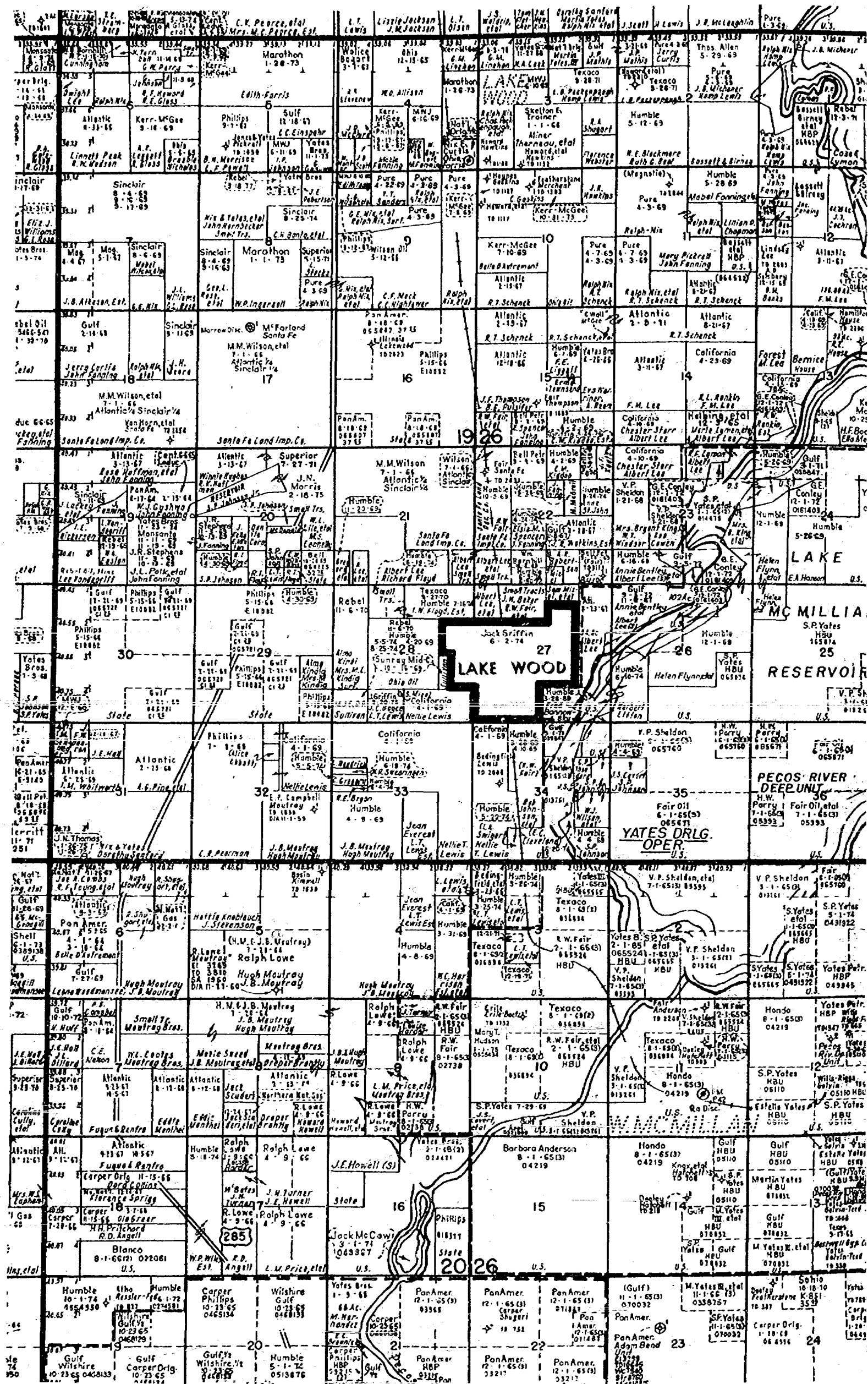
WELL ECONOMICS - ASSUMING 640 ACRE DRAINAGE

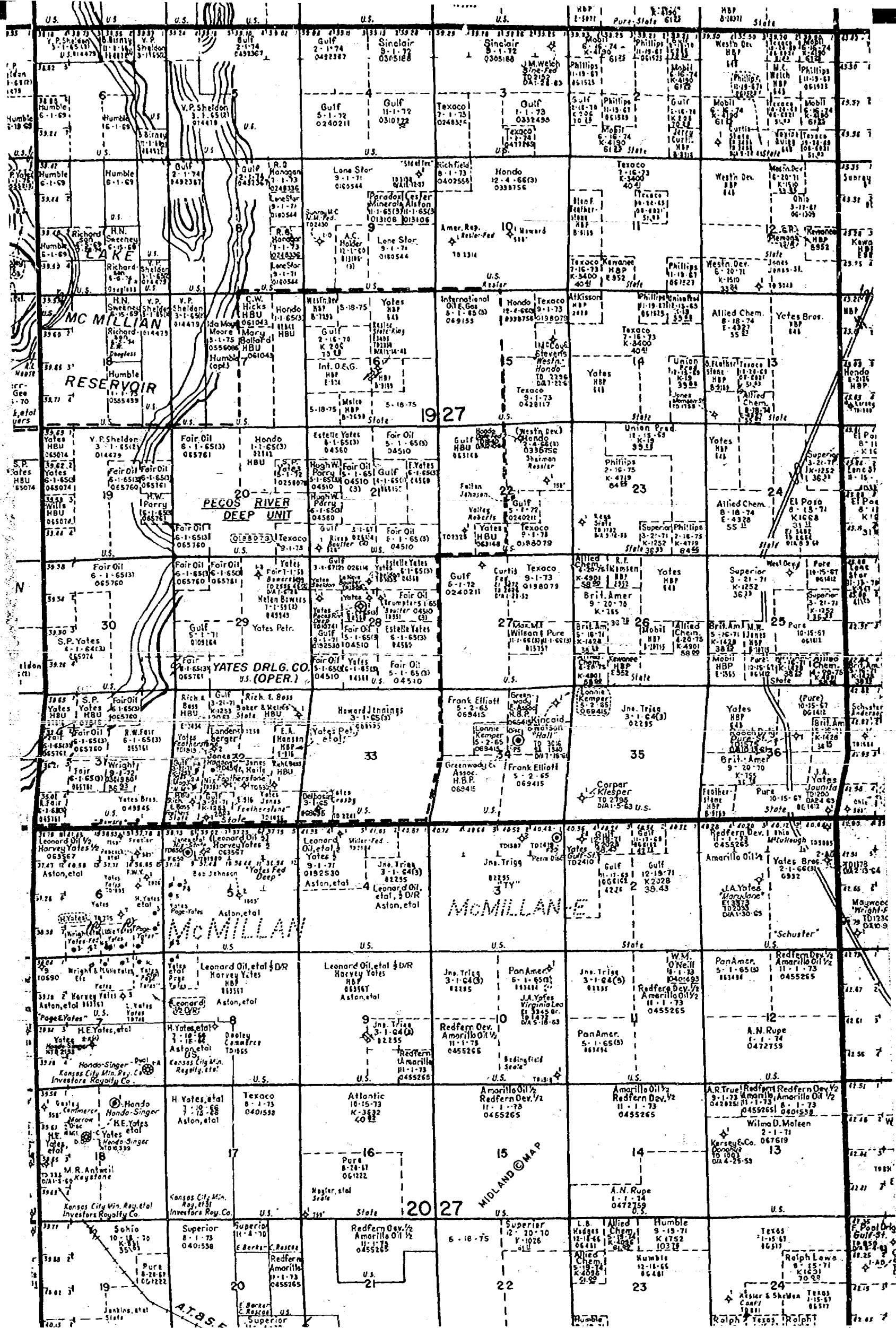
McMILLAN-MORROW GAS AREA

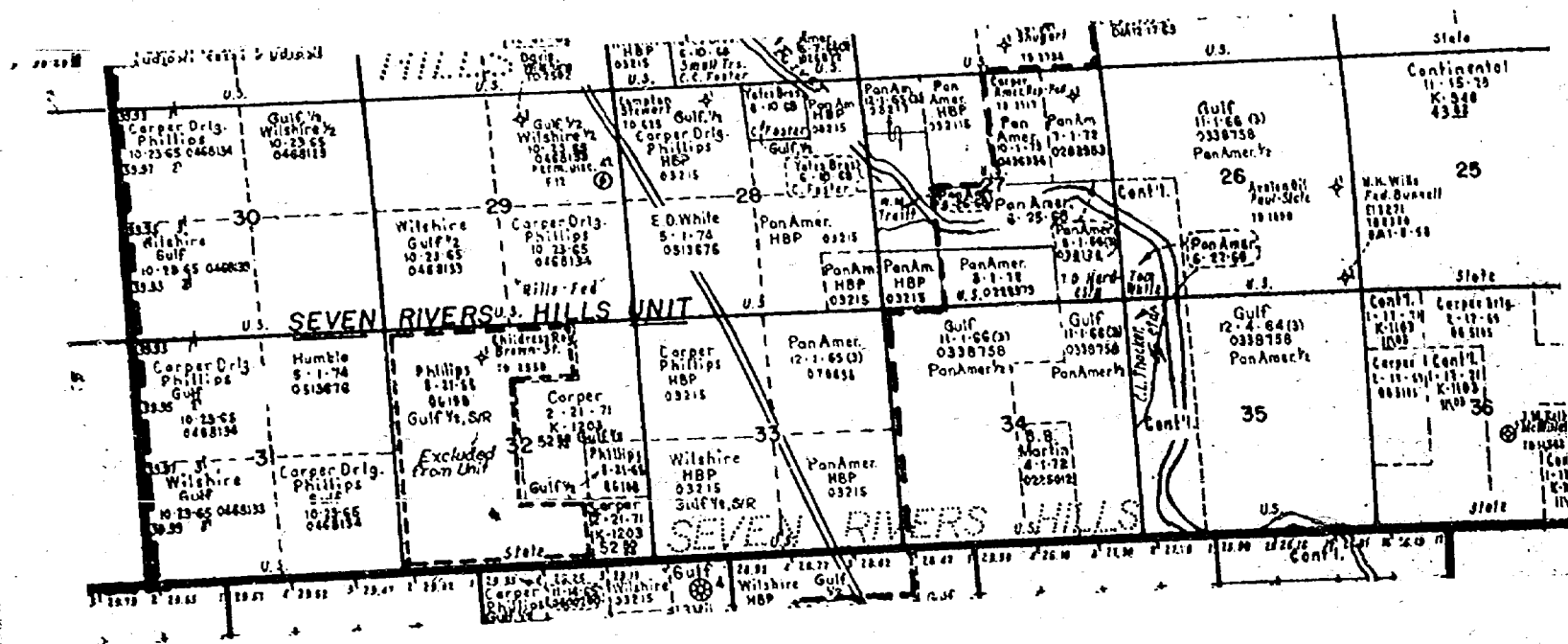
| | <u>NET PAY</u> | <u>W. I. RECOVERABLE GAS</u> | <u>W. I. INCOME* GAS & DISTILLATE</u> | <u>TOTAL COST</u> | <u>WORKING INTEREST PROFIT</u> |
|----------------------------|--------------------|----------------------------------|---|-------------------|------------------------------------|
| Pecos River Deep Unit #1 | 20' | 5,995,125 MCF | \$ 866,766 | \$310,000 | \$556,766 |
| Pecos River Deep Unit #3 | 24' | 7,194,150 MCF | \$1,040,119 | \$310,000 | \$730,119 |
| Harvey Yates-Singer "A" #1 | | | | | |
| Morrow Zone | 5' | 1,500,000 MCF | \$ 216,691 | \$310,000 | (Loss) \$ 93,309 |
| Atoka Zone | 5' | | | | |
| Harvey Yates-Singer "C" #1 | 28' | 8,393,175 MCF | \$1,213,472 | \$310,000 | \$903,472 |

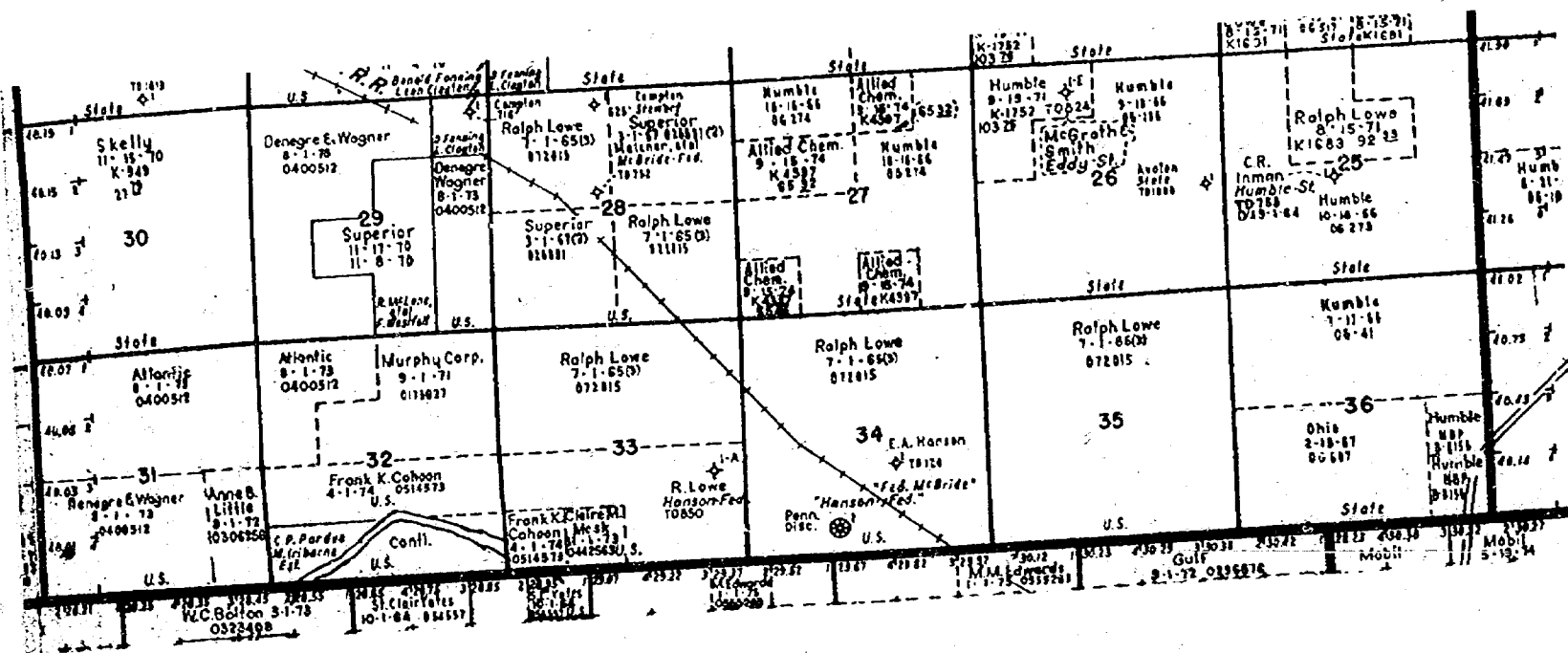
* Based upon gas price of 13¢/MCF after taxes, and distillate price of \$2.43/bbl.

Exhibit 13









#2

DRAFT

GMH/esr

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:

RECORDS CENTER & LAW LIBRARY

CASE No. 3890

Order No. R- 3529

APPLICATION OF PAN AMERICAN PETROLEUM
CORPORATION FOR SPECIAL POOL RULES AND
A NON-STANDARD GAS PRORATION UNIT, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

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

NOW, on this day of October, 1968, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Pan American Petroleum Corporation,
seeks the promulgation of special rules and regulations for the
Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, including
a provision for 320-acre spacing units and specified well loca-
tions.

(3) That the applicant further seeks approval of a non-
standard gas proration unit comprising the ~~SE/4, S/2 SW/4, and~~ ^{lots 3, 4, SE/4 SW/4, and SE/4}
~~the NW/4 SW/4~~ of Section 30, Township 17 South, Range 28 East,
NMPM, Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico,
to be dedicated to its State V Com Well No. 1, ^{to be} located 990 feet
from the South line and 990 feet from the East line of said
Section 30.

(4) That in order to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, ~~temporary~~ special rules and regulations providing for 320-acre spacing units should be promulgated for the Empire-Pennsylvanian Gas Pool.

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

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

(6) ~~That~~ That the proposed non-standard gas proration unit should be approved and dedicated to the Pan American Petroleum Corporation State V Com Well No. 1.

~~That this case should be reopened at an examiner hearing in _____, 1969, at which time the operators in the subject pool should be prepared to appear and show cause why the Empire-Pennsylvanian Gas Pool should not be developed on 160-acre spacing units.~~

IT IS THEREFORE ORDERED:

That ~~temporary~~ Special Rules and Regulations for the Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
EMPIRE-PENNSYLVANIAN GAS POOL

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

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

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a single governmental section and contains less acreage than a standard unit.
- (c) 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 the non-standard unit is situated and which acreage is not included in said non-standard unit.

- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located in the northwest quarter or the southeast quarter of the section and shall be located no nearer than ⁷⁹⁰~~990~~ feet to the outer boundary of the quarter section and no nearer than ¹³⁰~~330~~ feet to any governmental quarter-quarter section line.

RULE 5. The Secretary-Director may grant an exception to the footage requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon, provided the well will be located no nearer than ^{547.4}330 feet to the outer boundary of the unit. All operators offsetting the proposed unorthodox location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

Rule 6. Each well shall be cased and cemented as follows:

(a) Surface Pipe

The surface pipe shall be set through all shallow potable water-bearing beds, and a sufficient amount of cement shall be used to circulate the cement behind the

page is the maximum of the cellar.

(b) Intermediate String

The intermediate string of casing shall be set through the shallow oil-producing beds in the area, and in no event shall be set higher than the top of the San Andres formation and a sufficient amount of cement used to circulate the cement to the base of the surface casing.

(c) Production String

The production string shall be set no higher than the top of the producing formation, and a sufficient amount of cement shall be used to circulate the cement to a point above the top of the Wolfcamp producing formation encountered in the area at an approximate depth of 7,000 feet. An alternate cementing method may be employed using a two-stage tool, provided that the method is satisfactory to the District Oil and Gas Inspector.

Under for Further Order

Pan American Petroleum Corporation State V Com Well No. 1, ^{to be} located 990 feet from the South line and 990 feet from the East line of said Section 30. ~~The operator shall file a Form C-102 showing the dedication of acreage with the Artesia District Office of the Commission on or before _____, 1968.~~

(2) That the locations of all wells presently drilling to or completed in the Empire-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Artesia District Office of the Commission in writing of the name and location of the well on or before November 15, 1968.

→ (3) That each well presently drilling to or completed in the Empire-Pennsylvanian Gas Pool or in the Pennsylvanian formation within one mile thereof shall receive a 160-acre allowable until a Form C-102 dedicating 320 acres to the well has been filed with the Commission.

(4) That this case shall be reopened at an examiner hearing in _____, 1969, at which time the operators in the subject pool may appear and show cause why the Empire-Pennsylvanian Gas Pool should not be developed on 160-acre spacing units.

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

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

(3) That any operator desiring to dedicate 320 acres to a well presently drilling to or completed in the Empire - Pennsylvanian Gas Pool shall file a Form C-102 with the Commission on or before November 15, 1968.