

CASE 3492: Application of MIDWEST
OIL CORP. for pool rules for the
CINTA ROJA-MORROW GAS POOL.

CASE NO.

3492

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

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BEFORE THE NEW MEXICO
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 30, 1966

EXAMINER HEARING

In the matter of:

Application of Midwest Oil
Corporation for special pool
rules, Lea County, New Mexico

CASE NUMBER
3492

BEFORE:

DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTERHEARING DATE NOVEMBER 30, 1966 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Richard S. Morris	Montgomery, Federal & Anderson	- Santa Fe
John Pulte	Midwest Oil	Midland, Tex
WJ Braden	"	"
H. H. Swearing	Independent	Koswell, N.M.
R. F. Montgomery	Mc-Tex Supply Co	Hobbs
Carl F. Harpke	Pan American	Ft Worth Texas
Bug Buell	✓ ✓	✓ ✓ ✓
Byron Kelly	unlabeled Kelly	Fort Worth
Harmon J. Lubber	Government Oil	Artistic
CARL L. O'NEIGHAM	TEXACO INC	MIDLAND
E. DALE McCARTER	TEXACO INC	HOBBS
Howard Perdue	Union Texas Petroleum	Midland
GEORGE EATON	Pan American Petroleum	FARMINGTON
Bart Giles	" " "	Denver
Nina DuBaine	RW Bryan	SF
W. L. Leland	Mc-Lex Supply	Hobbs N.M.

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICOREGISTERHEARING DATE NOVEMBER 30, 1966 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
W. V. Kestler	Gulf Oil Corp	Roswell, N.M.
John L. Horner	"	"
J. L. Hutchinson	"	"
Louis C. Ross	Pan American Pet. Corp.	Danville, Cal.
Dean Swan	"	"
John Yumha	Burleson & Huff	Midland, Texas
Jack Huff	"	"
Jim B. Burleson	"	Midland, Texas
Pete Mancoske	Seaway Oil Co.	Roswell, N.M.
Jason W. Kellahy	Kellahy & Co.	Santa Fe
Frank E. Lutz	State Engr. Office	Santa Fe
A. L. Pinner	O.C.C.	"
P. J. McLaughlin	U.S.G.S.	Farmington
John E. Lutz	U.S.G.S.	Roswell

MR. NUTTER: The hearing will come to order, please.
The first case this morning will be Case 3492.

MR. HATCH: Case 3492, application of Midwest Oil Corporation for special rules, Lee County, New Mexico.

MR. MORRIS: May it please the Examiner. I am Dick Morris of Montgomery, Federici and Andrews, Santa Fe, appearing on behalf of the applicant Midwest Oil Corporation. We have one witness, Mr. John Pulte and I ask that he be sworn please.

(Witness sworn)

MR. NUTTER: At the outset of this case, Mr. Morris, would you explain what the meaning of the name of this pool is and why it was named that?

MR. MORRIS: I think I better defer to my witness.
As I recall, Mr. Examiner that is the closest translation that could be made to red tape.

MR. PORTER: It was a red tape pool?

JOHN PULTE, called as a witness on behalf of the applicant having first been duly sworn in was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Pulte will you please state your name, where you reside, by whom you are employed and in what capacity.

A John Pulte, 1803 Country Club Midland, Texas, worked

for Midwest Oil for the past two years and in the capacity of Petroleum Engineer.

Q Have you previously qualified before the New Mexico Oil Conservation Commission or one of it's examiners as an expert witness?

A No, I have not.

Q Then would you briefly state your education and experience in the petroleum industry.

A I was graduated from Texas Western College in 1964 with B. S. degree in mining engineering. Since that time I have worked for Texas Pacific Coal and Oil, Frankfurt Oil Company and Midwest Oil Corporation as a Petroleum Engineer.

Q Are you familiar with the application of Midwest Oil Corporation in Case 3492?

A Yes, I am.

MR. MORRIS: Are the witnesses qualifications acceptable.

MR. NUTTER: Yes, but would you spell your name, please.

THE WITNESS: P-U-L-T-E

MR. NUTTER: Thank you.

(Whereupon applicant's Exhibit No. 1 marked for identification)

Q (By Mr. Morris: If you will, Mr. Pulte, refer to what has been marked as Exhibit No. 1 in this case and state what

that exhibit is and point out the pertinent features of it.

A Exhibit 1 is the land ownership map. It shows the location of the Custer Mountain Unit no. 1 in Section 9. It also shows the unit outline, the old unit outline and the new unit outline.

Q The old unit outline is shown in green and that was the original Custer Mountain Unit.

A That's right.

Q And the present unit boundary is shown in red?

A That's right, it has been reduced to Section 9 only.

Q I see. Who is the operator of that unit?

A Midwest Oil Corporation is the operator.

Q How many wells have been drilled in this field?

A One well, the Custer Mountain Unit no. 1

Q And that is the only unit well?

A That's right.

(Whereupon, Applicant's Exhibit No. 2 marked for identification)

Q If you will refer to what has been marked as Exhibit No. 2 in this case showing well data and production record of this unit well and point out just the features of that Exhibit.

A The Exhibit 2, shows the well data of the Custer Mountain Unit no. 1 and the production record. The production

record was presented to correspond with cumulative production at the end of each of the three build-up tests.

Q And shows the production for each one of those tests?

A That's right.

(Whereupon, Applicant's Exhibit No. 3 marked for identification)

Q Referring next as to what has been marked as Exhibit No. 3, what is that exhibit?

A Exhibit 3 is a section of the Gamma-Ray Sonic Log taken of the Custer Mountain Unit No. 1. On the log is plotted the perforations and it shows the position of the Model D. Packer in the tubing in the well, as well as the porosity in the water saturation estimates taken from the log.

Q From this log can you say what the producing, the gross producing interval is in the Marl.

A The gross interval that we consider net pay is from fourteen thousand and seventy four feet to fourteen thousand two hundred and eighty-eight feet.

Q All right, now what portion of that interval do you consider as being net pay?

A Net pay in that interval is twenty-six feet.

Q Which twenty-six feet is that?

A There is twenty-two feet in the lower section and six feet in the upper section.

MR. NUTTER: Twenty-eight feet total?

MR. MORRIS: Twenty-eight feet.

THE WITNESS: Yes

Q All right then, there are some other perforations shown there which are marked nonproductive and no effective porosity, is that correct?

A That is right. They were perforated but are not considered productive pay since they have no effective porosity .

Q Then some other perforations are shown there above the packer, Mr. Pulte, what is the status of that?

A These perforations were tested separately and on test actually flowed less than a hundred MCF per day and were considered essentially nonproductive. They are still open and were not squeezed and there is no pressure on the casing tubing annulus.

(Whereupon, Applicant's Exhibit No. 4 marked for identification)

Q Referring now to Exhibit 4 and the attachment to Exhibit 4, will you describe the procedure that you followed in estimating the original gas in place in this pool.

A Exhibit 4 shows the original gas in place calculated by material balance and volumetrically. The material balance estimate is shown on the attachment as a plot of cumulative

production versus the corresponding bottom hole pressure over the compressibility factor Z and an extrapolation of these three points, shown on the attachment is the original gas in place of 18.6 billion cubic feet.

Q Now that is for the entire pool, is that correct?

A That's right. That represents the volume of gas that the well is in communication with.

Q All right now go ahead as to volumetric estimate.

A The volumetric estimate is calculated for 640 acres. It's based on information obtained from well logs and pressure build up. The purpose of showing this is to relate the volume calculated for 640 acres of 14.2 billion to the total volume in the reservoir of 18.6 and is intended to show that the well is actually draining at least 640 acres.

Q In other words your volumetric estimate for 640 acres is 14.2 billion and the one well is in communication with a reservoir of 18.6 billion?

A That's right.

(Whereupon, Applicant's Exhibit's 5 and 6 marked for identification)

Q All right. Mr. Pulte both Exhibits 5 and 6 are economic analyses of this pool. Would you explain just briefly first why we have presented two exhibits with respect to economics and then go through the first one.

A The first exhibit, Exhibit 5, the economics are presented to show what the total income would be from the Custer Mountain Unit No. 1 draining the entire pool and Exhibit 6 shows the cost of a well drilled to the Marl only and the income from this well draining 640 acres only.

Q In other words, Exhibit 5 is a more practical, economic analysis showing the actual cost of your No. 1 well and what you expect it to recover and Exhibit 6 is a theoretical study of what a second well would cost and what it would drain and return to you on a 640 acre spacing?

A That's right.

Q All right. Going back now to Exhibit 5, would you point out the procedures you used in analyzing the economics of this well No. 1.

A In the Well No. 1 we are involved with two different percentages, one during pay out of 71.916 per cent and one after pay out of 78%. I first figured the value of production to the working interest during pay out and after pay out for the gas in the condensate. The next major heading is the investment, the cost of the well \$900,000, cost of production equipment and facilities \$80,000.00. Total investment of \$980,000.00. The production required to pay out the investment is shown as 8,000,000 --- 8,000,600,000 cubic feet and 43,000 barrels of condensate. Next is shown the income which is

based on an estimated recovery of 85 percent of the total gas in place of the entire reservoir. That total is shown under the total column as 15,000 -- 15,800,000 MCF and 79,000 barrels of condensate. That breaks down into the figure shown during pay out and after pay out. The net income for the volume shown is during pay out gas and condensate 980,000. The cost of the well after pay out 900,000 for a total of \$1,880,000.00. The next is shown the ratio of net income to investment of 1.9 two to one. The present of future net income figured at twenty years at 6% is 1,110,000 and the ratio present worth of future net income to investment is 1.4 to one.

Q On the basis of that now, Mr. Pulte, would there be, and just on the basis of this exhibit, without even going to the next one would there be -- would it be economically feasible to develop this pool on less than 640 acre spacing?

A No it would not.

Q All right we will talk about that a little bit more when we get into the second exhibit two. Before we leave Exhibit 5 though, are your studies particularly as to the present worth of the future net income, based upon a given rate of production?

A This is based on a rate of 2,000,000 cubic feet per day.

Q And is that amount -- do you expect to produce that amount under your gas purchase contract if 640 acre spacing is provided by the Commission?

A Yes, we do.

Q If 640 acre spacing is not provided by the Commission would you be able to produce at that rate?

A No, according to the gas purchase contract it calls for 2,000,000 cubic feet per day for 640 acres and anything less would be reduced correspondingly.

Q All right going to Exhibit 6 now, the theoretical second well in the pool would you point out the features of your study there.

A Exhibit 6 shows the cost of drilling a well to the Marl under a, with a net working interest of 78%. Here again the estimated recovery of 85% of the gas in place for 640 acres, which shown before, was 14.2 billion cubic feet. 85% of that figure is 12 billion, one hundred thousand and the condensate averaged at five barrels per million cubic feet of 60,500 barrels. The total net income, the working interest from this recovery is \$1,510,000.00. At present worth the future net income twenty years at 6%, 890,000 and the ratio of present worth of future income to the investment of 1.79 to one.

Q All right, now, Mr. Pulte, that is on the -- this study has been made on the basis of 640 acre spacing?

A That is right.

Q And your ratio of net income to investment of 3.03 to one assumes 640 acre spacing.

A That is right.

Q If you assumed 320-acre spacing what would your ratio of net income to investment be?

A The ratio would be reduced by half as would the recovery and the income .

Q All right and then approximately what would your ratio of present worth of future net income to investment be on 320 acre spacing?

A This would be somewhat approximately half of the figure shown.

Q It would be less than one to one ratio?

A Right, right.

Q Here again, Mr. Pulte, this assumes production at 2 million cubic feet of gas per day in accordance with your gas purchase agreement for 640-acre spacing.

A That is right.

Q All right. From the exhibits that you have submitted to the Commission, what would be your opinion as to the size spacing unit that could be efficiently and economically

drained and developed by one well.

A I believe from the information shown that one well will effectively drain 640 acres.

Q And that 640 acre spacing is required from economic consideration?

A Yes.

Q Concerning rules to be adopted for the pool Mr. Pulte, I note that the Gramma Ridge Marl Gas Pool had 640 acre spacing adopted for it in case 3337. Order No. R-3006 dated December 3, 1965. Would those rules be suitable to you and be proposed by you as the rules to be adopted by the Commission for this pool?

A Yes they would be.

Q Were Exhibits 1 through 6 prepared by you or at your direction?

A Yes, sir. They were.

MR. MORRIS: We offer Exhibits 1 through 6 into evidence.

MR. NUTTER: Applicants Exhibits 1 through 6 will be admitted into evidence.

(Whereupon Applicant's Exhibits 1 through 6 were admitted in evidence.)

MR. MORRIS: That's all I have of Mr. Pulte on direct examination.

MR. HATCH: May I get that R. number please.

MR. MORRIS: The R. number is 3006.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Pulte, in estimating your reserves there for Exhibit No. 5 being the pay out on the first well you used your 18.6 billion cubic feet of reserve which you derived from your pressure decline --

A That's right.

Q -- analysis, is that correct?

A Correct.

Q And then in making the analysis of the economics of the second well you used your volumetric reserves?

A Right.

Q Do you think that there would be a difference if a second well would not have the reserves that this first exhibits, according to it's pressure decline?

A That's right. This was simply shown for 640 acres that I believe the total gas in place doesn't exceed 18 billion.

Q Does Midwest anticipate drilling a second well?

A No, sir.

Q You think this will be a one well pool then?

A That's right. We have contracted the unit since --

recently.

Q Was the original structure that you drilled the well on larger than Section 9?

A I'm not sure that the structure has any bearing on this.

Q Well, I presume that there was some kind of a structure here or else this unit wouldn't have been formed in configuration of it.

A This was actually drilled to the Devonian originally sixteen five hundred -- 16,500 feet and the Marl discovery was made.

Q Was it dry in the Devonian?

A Dry in the Devonian.

Q Now this \$900,000.00 that you got for well cost, is that the cost of -- or \$980,000.00 including the well head equipment.

A That includes the total --

Q Production equipment?

A Total cost that the -- total money we have spent to drill the well to the Devonian and install production equipment and facilities.

Q Now the 14,300 takes care of drilling to the lower-most pay in the Marl?

A That is right.

Q Is \$500,000.00 for a cost of a well a reasonable cost to drill a 14,300 foot well in a field?

A It's an estimate but I believe it's a reasonable cost.

Q Do you think the average 14,000 foot well costs \$500,000?

A I don't know.

Q Now the contract, you stated calls for taking 2,000 cubic feet of gas per day or 2,000 MCF per day. Based on 640 acre spacing is this a -- What does the contract actually call for? Is it a ratio of production to reserves of just what, how does that contract specify that?

MR. MORRIS: Could I have this marked Exhibit 7?

(Whereupon, Applicant's Exhibit 7 was marked for identification)

A I would like to point out here, as far as cost of this, this \$500,000 used as the cost of a well and production equipment, judging from the cost involved in drilling the Custer Mountain Unit No. 1, did seem to be a reasonable cost. It would be necessary to set additional production equipment and pipe line, of course, to tie in with the other one. On this basis I feel that it is reasonable.

Q By Mr. Nutter. I can appreciate that \$980,000 is probably a reasonable cost for a wildcat well drilled 16,500 feet to the Devonian. It was just that I was wondering, a

development well in a pool which has been discovered would cost \$500,000 for a 14,500 foot well.

MR. MORRIS: Mr. Pulte, I hand you what has been marked Exhibit Number 7 in this case and will ask that you answer the Examiner's question concerning the Gas Purchase Agreement and your purchaser's obligation with respect to Article 4 of that agreement. Excuse me, actually, Mr. Examiner, maybe I can shed a little light on that. This Article 4 of the Gas Purchase Agreement provides for a minimum quantity of 2,000,000 cubic feet of gas per day to be taken by the purchaser if the gas well has 640 acres allocated to it and a proportionate reduction, if less than 640 acres be allocated. The purchaser takes the position that the, that Midwest can only allocate to the well that it is permitted by law to allocate to the well, under the Commission rules and regulations. And we will offer this Gas Purchase Agreement into evidence so that Article 4 of the agreement can be of record to show just what the obligation is.

MR. NUTTER: That's good.

REDIRECT EXAMINATION

BY MR. MORRIS:

Q With that in mind, Mr. Pulte, is this -- this is not an executed copy of the contract, but is it in the form of the contract that is in effect with respect to this well?

A It is.

Q All right, and who is your purchaser?

A El Paso Natural Gas.

MR. NUTTER: This is Exhibit 7?

MR. MORRIS: That's Exhibit 7.

MR. NUTTER: Applicant's Exhibit 7 will be admitted
in evidence.

(Whereupon, Applicants Exhibit 7
was admitted in evidence.)

MR. MORRIS: Excuse me, for breaking in but I thought
that might clarify it a little bit.

MR. NUTTER: That is very good.

RE-CROSS EXAMINATION

BY MR. NUTTER:

Q Now Mr. Pulte, I noticed that you took a couple of
build up tests, one of them was probably pretty close to 90
days. What did those build-up tests indicate in the way of
reserves.

A Those build-up tests were used to obtain the
pressures to plot the cumulative production versus the pressure
shown on the -- on this Exhibit 4.

Q Were any estimates of reserves made at the time of
the build-up test? Now your Exhibit No. 4, is it?

A Yes, sir.

Q I presume the first two points there would be the results of the build up pressure test and then the third point down here --

A The first -- That's right, the first point represents the pressure obtained from the first build up test. The second point the pressure versus the cumulative production after the second test and the third point is pressure at cumulative production after that third test.

Q In other words this third point would be at February 16th of '66, when you had 789,000 cumulative MCF of production?

A Right.

Q Now apparently the purchaser has bought much less gas proportionately per day in this last eight or nine months than he did in the --

A Yes, sir.

Q -- eight or nine month period prior to that.

A Yes, sir. This -- we requested from El Paso that they allow us to flow the well at a 4,000,000 rate, initially to test it and they did grant us this and since that time have been cutting back to a small figure, just a very small amount at the present time.

Q If you had fourth point, now, your total cumulative production as of October 1st was something over a million MCF. Do you have any corresponding pressure which would go on

this pressure decline curve out here?

A No, sir. We don't. Our last pressure was taken February 2, began the fluid build up test February 2, '66.

Q And it's the third point on your pressure decline?

A Yes, sir.

Q Now do you know of any similarities that this reservoir in the Marl may have to any other Marl reservoir for which the Commission has established 640 acre spacing?

A One was, the Marl, in general, of course, the one that was pointed out here.

Q Gramma Ridge?

MR. MORRIS: Gramma Ridge Marl.

A And I believe, the Lush Marl is another one and I'm not -- I don't recall any more.

Q Have you made any actual comparison of this reservoir with those reservoirs?

A No.

Q If so, what are the similarities or the dissimilarities?

A I have not made a comparison. I don't know.

MR. NUTTER: Are there any other questions of this witness?

MR. MORRIS: I have just one or two other questions.

RE-DIRECT EXAMINATION

BY MR. MORRIS"

Q Mr. Pulte where is the Gramma Ridge Marl Gas pool located with respect to the subject pool. Well just -- would it be a fair statement to say it's approximately ten miles north-east of this pool?

A Approximately.

A Are there any other Marl pools in the vicinity of this pool?

A None.

Q Well to your knowledge?

A None to my knowledge.

Q By Mr. Morris. I think just to keep the record straight that there is an Antelope Ridge Marl in this vicinity. Would that be right?

A That's right.

MR. MORRIS: But the Commission's records will show that there's never been -- 640 acres spacing was not requested with respect to that pool.

RE-CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Pulte, has any other well been drilled to the Marl in the old Custer Mountain Unit area?

A Not within the old area.

Q I notice you have got one deep well up north here but it's outside of the unit area?

A That is right.

Q And this is the only well that was drilled that deep in the Old Custer Mountain Unit?

A In the old Custer Mountain Unit area this is the only well.

MR. NUTTER: Are there any other questions of the witness? You may be excused.

(Witness excused)

MR. NUTTER: Do you have anything further Mr. Morris?

MR. MORRIS: No Sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3492? We will take the case under advisement and call Case 3493.

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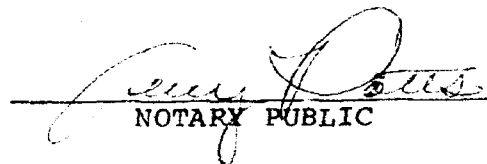
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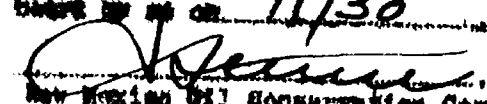
STATE OF NEW MEXICO)
COUNTY OF BERNALILLO)

I, JERRY POTTS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of hearing was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.


NOTARY PUBLIC

My Commission Expires:

July 10, 1970

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner Hearing of Case No. 3492 held by me on 11/30 1966

J. Schaefer
New Mexico Oil Conservation Commission

Nov 9 AM 11:11

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION OF MIDWEST OIL CORPORATION
FOR THE ESTABLISHMENT OF SPECIAL RULES
AND REGULATIONS IN THE CINTA ROJA-MORROW
GAS POOL, LEA COUNTY, NEW MEXICO.

Case No. 2864

A P P L I C A T I O N

Comes now Midwest Oil Corporation by its attorneys and applies to the New Mexico Oil Conservation Commission for the establishment of special rules and regulations in the Cinta Roja-Morrow Gas Pool and in support of its application states:

1. Midwest Oil Corporation is the operator of the Custer Mountain Unit comprising Sections 3, 4, 5, 7, 8, 9, 10, 14, 15, 16, 17, 18, 20, 21, 22, 23, 26 and 27, Township 24 South, Range 35 East, Lea County, New Mexico, which unit was established by the Commission by its Order No. R-2531 entered in Case No. 2864 on July 30, 1963.

2. Midwest Oil Corporation is the operator of the Custer Mountain Unit Well No. 1 located in the SW $\frac{1}{4}$ of Section 9, Township 24 South, Range 35 East, Lea County, New Mexico.

3. Following completion of the Custer Mountain Unit Well No. 1 as a gas well in the Morrow Formation, the Commission by Order No. R-2985, effective November 1, 1965, established the Cinta Roja-Morrow Gas Pool comprising the SW $\frac{1}{4}$ of said Section 9.

4. Midwest Oil Corporation proposes the establishment of special rules and regulations for the Cinta Roja-Morrow Gas Pool to include provisions for 640-acre gas well spacing and flexible well location requirements.

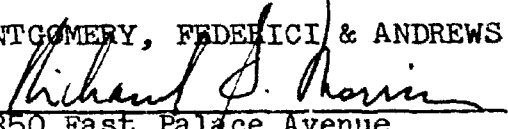
5. The evidence presently available with respect to the Cinta Roja-Morrow Gas Pool shows that one well in that pool can efficiently and economically drain and develop an area of 640 acres.

6. Approval of this application will prevent waste and protect correlative rights.

WHEREFORE, Midwest Oil Corporation requests that this application be set for a hearing before the Commission or one of its examiners and that the Commission establish special rules and regulations for the Cinta Roja-Morrow Gas Pool in accordance with this application.

MONTGOMERY, FEDERICI & ANDREWS

By


350 East Palace Avenue
Post Office Box 2307
Santa Fe, New Mexico 87501

Attorneys for Applicant,
Midwest Oil Corporation.

State of New Mexico
Oil Conservation Commission



P. O. BOX 2088
SANTA FE

OTHER _____

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 30, 1966

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

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

- CASE 3492: Application of Midwest Oil Corporation for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Cinta Roja-Morrow Gas Pool, Lea County, New Mexico, including a provision for 640-acre proration units.
- CASE 3493: Application of H. W. Sweeney for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Hale Unit Area comprising 1920 acres, more or less, of Federal, State and Fee lands in Township 20 South, Range 30 East, Eddy County, New Mexico.
- CASE 3494: Application of Texaco Inc. for a non-standard gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Cotton Draw Unit Well No. 64 at an unorthodox gas well location 660 feet from the North line and 1652 feet from the West line of Section 18, Township 25 South, Range 32 East, in an undesignated Devonian gas pool, Lea County, New Mexico.
- CASE 3495: Application of Burleson & Huff for a non-standard proration unit and a non-standard location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a 50.30-acre non-standard oil proration unit comprising all of Lot 3, Section 2, Township 16 South, Range 32 East, North Anderson Ranch-Wolfcamp Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at a non-standard location for said pool 990 feet from the North line and 330 feet from the East line of said Lot 3.
- CASE 3496: Application of Newmont Oil Company for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its West Square Lake Waterflood Project, Square Lake Pool, by the conversion to water injection of its Continental State Well No. 1, located 1980 feet from the North line and 1990 feet from the West line of Section 36, Township 16 South, Range 30 East, Eddy County, New Mexico.
- CASE 3497: Application of Me-Tex Supply Company for a non-standard gas proration unit and a non-standard gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a non-standard gas proration unit comprising Lots 5, 6, 11, 12, 13, and 14 of Section 3, Township 21 South, Range

(Case 3497 continued)

36 East, Eumont Gas Pool, Lea County, New Mexico, to be dedicated to its Wallace State Well No. 3 located at an unorthodox location 3,300 feet from the South line and 1980 feet from the West line of said Section 3. Applicant further seeks the assignment to said proration unit of the accumulated underproduction presently carried by its Wallace State Well No. 2 located in Unit L of said Section 3, said well currently being dedicated to a 160-acre non-standard gas proration unit comprising Lots 5, 6, 11, and 12 of said Section 3, and also the assignment to said unit of the accumulated underproduction presently carried by the aforesaid Wallace State Well No. 3, said well currently being dedicated to an 80-acre non-standard proration unit comprising Lots 13 and 14 of said Section 3.

CASE 3498: Application of Pan American Petroleum Corporation for a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in the Piñon Gallup Oil Pool by the injection of water into the Gallup formation through five wells located in Section 19, Township 28 North, Range 11 West and Sections 14, 15, and 24, Township 28 North, Range 12 West, San Juan County, New Mexico. Applicant further seeks the promulgation of special rules for the operation of said project.

CASE 3499: Application of Pan American Petroleum Corporation for pressure interference tests, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to conduct a pressure interference test in the Cato-San Andres Pool, Chaves County, New Mexico, by shutting in a number of its wells in said pool and producing its Baskett "D" Well No. 1 located in Unit G, Section 11, Township 8 South, Range 30 East, Chaves County, New Mexico. Applicant also seeks authority to transfer the allowable from other wells on said Baskett "D" lease to Well No. 1, to temporarily overproduce said lease, and to make-up the overproduction at the conclusion of the test period by curtailment of wells on said lease. Applicant further seeks authority to accumulate underproduction on any lease where wells will be shut-in, for production upon conclusion of the interference tests.

J. O. SETH (1883-1963)
A. K. MONTGOMERY
WM. FEDERICI
FRANK ANDREWS
FRED C. HANNAHS
RICHARD S. MORRIS
JOHN G. JASPER
SUMNER G. BUELL
SETH D. MONTGOMERY

MONTGOMERY, FEDERICI & ANDREWS
ATTORNEYS AND COUNSELORS AT LAW
350 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87501

POST OFFICE BOX 2307
AREA CODE 505
TELEPHONE 382-3876

November 8, 1966 *car 3492*

Mrs. Ida Rodriguez
New Mexico Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico

Re: Application of Midwest Oil
Corporation for the
establishment of special
rules and regulations in
the Cinta Roja-Morrow
Gas Pool, Lea County,
New Mexico

Dear Ida:

Enclosed is application of Midwest Oil Corporation
that I discussed with you on the telephone earlier
this week. I understand that this application will
be set for examiner hearing on Wednesday,
November 30, 1966. If this understanding is
incorrect, I would appreciate your call.

Sincerely yours,

Dick

RSM:dd
Enclosure

CC - Mr. John Pultie
Midwest Oil Corp.
1500 Wilco Bldg.
Midland, Texas
w/enc.

DOCKET MAILED

Date 11-18-66
RL

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 12/2/66

CASE 3492

Hearing Date 9am 11/30/66
from DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order establishing 640 acre spacing for the Cinta Raja-Morrow gas Pool in Lea County New Mexico. Define the horizontal limits of the Pool to ~~is~~ be all of 9-245-35E and the vertical limits to be the Morrow zone of the Pennsylvanian formation.

Require any well drilled to the Morrow ^{in the Pool or} within 1 mile of the Pool to have dedicated to it 640 acres being a 1/4 mile, ~~and be~~ located at least 1650' from the outer boundary of the 640-acre unit.

San Antonio

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. 3492
Order No. R-3161
NOMENCLATURE

APPLICATION OF MIDWEST OIL CORPORATION
FOR SPECIAL POOL RULES, LEA COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 30, 1966, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 6th day of December, 1966, 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, Midwest Oil Corporation, seeks the promulgation of special rules and regulations for the Cinta Roja-Morrow Gas Pool, Lea County, New Mexico, including a provision for 640-acre spacing units.

(3) That the applicant has established that one well in the Cinta Roja-Morrow Gas Pool can efficiently and economically drain and develop 640 acres.

(4) That the vertical limits of said pool should be defined as the Morrow zone of the Pennsylvanian formation and the horizontal limits of said pool should be extended to include the N/2 and SE/4 of Section 9, Township 24 South, Range 35 East, NMPM, Lea County, New Mexico.

-2-

CASE No. 3492
Order No. R-3161

(5) 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 640-acre spacing units should be promulgated for the Cinta Roja-Morrow Gas Pool.

(6) 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.

IT IS THEREFORE ORDERED:

(1) That the vertical limits of the Cinta Roja-Morrow Gas Pool shall be the Morrow zone of the Pennsylvanian formation and the horizontal limits of said pool shall be extended to include the N/2 and SE/4 of Section 9, Township 24 South, Range 35 East, NMPM, Lea County, New Mexico.

(2) That Special Rules and Regulations for the Cinta Roja-Morrow Gas Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
CINTA ROJA-MORROW GAS POOL

RULE 1. Each well completed or recompleted in the Cinta Roja-Morrow Gas Pool or in the Morrow formation within one mile thereof, and not nearer to or within the limits of another designated Morrow 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 containing 640 acres, more or less, consisting of a governmental section.

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

-3-

CASE No. 3492
Order No. R-3161

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 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 no nearer than 1650 feet to the outer boundary of the section and no nearer than 330 feet to any governmental quarter-quarter section line.

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

-4-

CASE No. 3492
Order No. R-3161

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Cinta Roja-Morrow Gas Pool or in the Morrow formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well on or before January 1, 1967.

(2) That the operator of each well presently drilling to or completed in the Cinta Roja-Morrow Gas Pool or in the Morrow formation within one mile thereof shall receive a 320-acre allowable until a Form C-102 dedicating 640 acres to the well has been filed with the Commission.

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

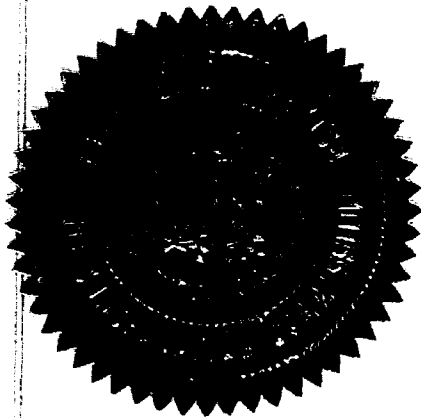
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JACK M. CAMPBELL, Chairman


CLAYTON B. HAYS, Member


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



esr/

ECONOMIC ANALYSIS
CUSTER MONITORING UNIT NO. 1

INTEREST:

Net working interest during payout, % 71.916
Net working interest after payout, % 78.000

VALUE OF PRODUCTION TO WORKING INTEREST

Gas: Price/MCF x N.W.I. - Costs
During Payout: \$ 0.16 x 0.71916 - 0.010 = \$0.109/MCF
After Payout: \$ 0.16 x 0.78000 - 0.010 = \$0.119/MCF

Condensate: Price/bbls x N.W.I. - Cost
During Payout: \$2.88 x 0.71916 - 0.25 = \$1.82/bbl
After Payout: \$2.88 x 0.78000 - 0.25 = \$2.00/bbl

INVESTMENT:

Cost of Well \$900,000.
Cost of Production equipment and facilities 80,000.
Total Investment \$980,000.
Production Required to Payout Investment:
Gas, MCF 8,600,000.
Condensate, bbl. 43,000.

INCOME:

	<u>DURING PAYOUT</u>	<u>AFTER PAYOUT</u>	<u>TOTAL</u>
Estimated Recovery:			
Gas- 85% of 18.6 MMCF, MCF	8,600,000	7,200,000	15,800,000
Condensate-Avg 5 bbls/MMCF, bbls	43,000	36,000	79,000
Net Income to Working Interest:			
Gas	\$ 900,000.	\$ 828,000.	\$ 1,730,000.
Condensate	78,000.	72,000.	150,000.
	\$ 900,000.	\$ 900,000.	\$ 1,880,000.

Ratio of Net income Investment 1.92 to 1
Present Worth of Future Net Income -20 years at 4% \$1,110,000.
Ratio Present Worth of Future Net Income to Investment 1.14 to 1

PAYOUT:

Yearly Production:
Gas: 365 days at 2,000 MCF/day, MCF 720,000
Condensate: 365 days at 10 bbls/day, bbls 3,650
Yearly Net Income to Working Interest:
Gas @ \$0.109/MCF \$ 75,600.
Condensate @ \$1.82/bbl. 6,600.
Total \$ 82,200.

Payout of Well, Years 10.9
Payout of Production Equipment and Facilities, Years 1.0

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 3492

ECONOMICS

Second Well

INTEREST

Net Working Interest, %

78.00

VALUE OF PRODUCTION TO WORKING INTEREST

Gas: Price/MCF x NWI - Costs

\$ 0.115/MCF

Condensate: Price/bbl. x NWI - Costs

\$ 2.00 /bbl

INVESTMENT

Cost of Well and Production Equipment

\$ 500,000.

INCOME

Estimated Recovery:

Gas: 85% of 14.2 MMMCF, MCF

12,100,000

Condensate: Avg 5 bbl/MMCF, bbls

60,500

Net Income to Working Interest:

Gas

\$ 1,390,000.

Condensate

120,000.

Total

\$ 1,510,000.

Ratio of Net Income to Investment

3.03 to 1

Present Worth of Future Net Income - 20 years to 6%

\$ 890,000.

Ratio Present Worth of future net income to investment

1.79 to 1

PAYOUT:

Yearly Production:

Gas: 365 days at 2,000 MCF/day, MCF

720,000

Condensate: 365 days at 10 bbls/day, bbls

3650

Yearly Net Income to Working Interest:

Gas: @ \$ 0.115/MCF

\$ 82,800.

Condensate: @ \$2.00/bbl

7,300.

Total

\$ 90,100.

Payout of Well and Production Equipment, Years

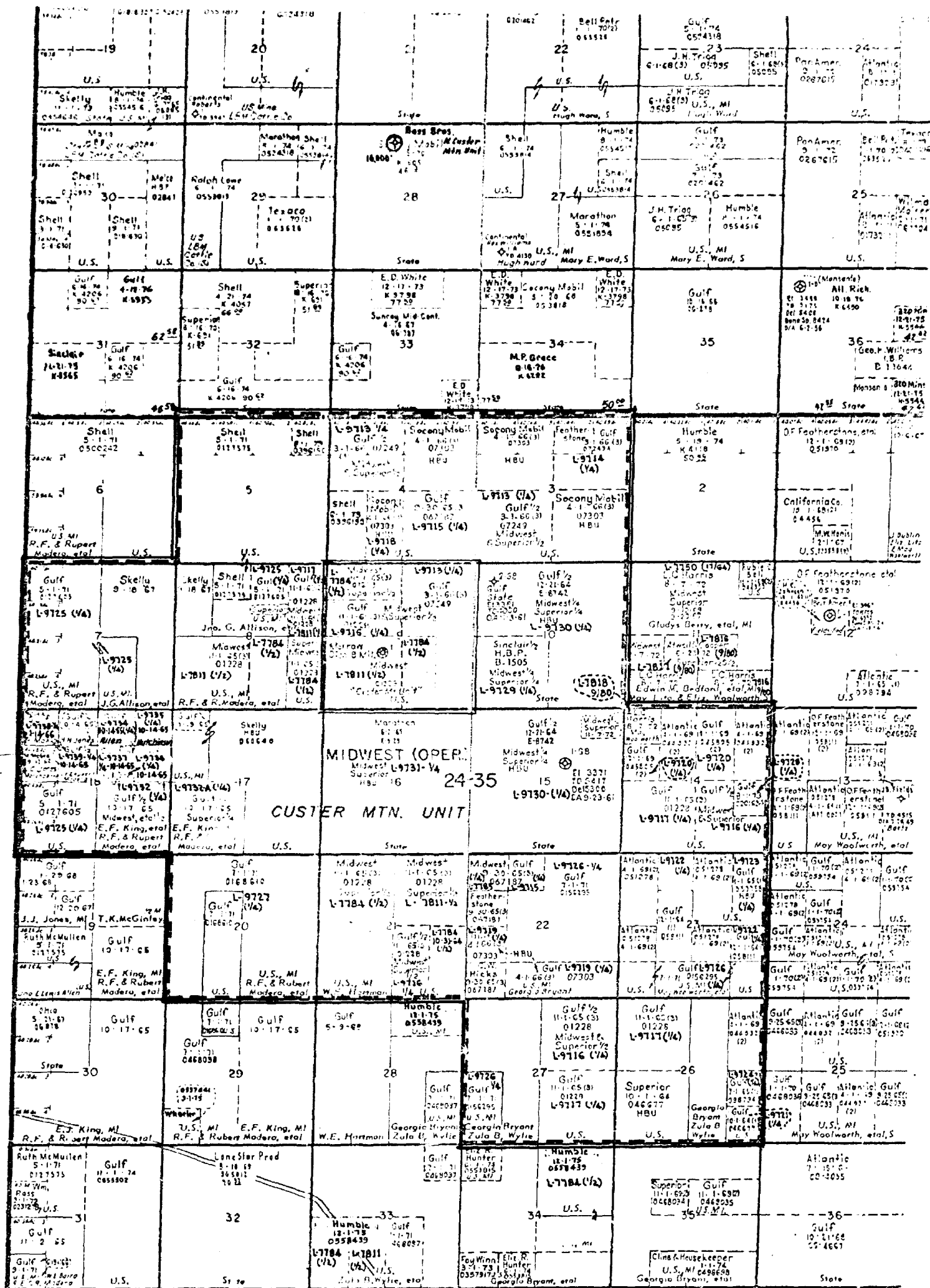
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BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6

CASE NO. 3492



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BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 1
CASE NO. 3492

- OLD UNIT OUTLINE
- NEW UNIT OUTLINE

MIDWEST OIL CORPORATION
MIDLAND, TEXAS
CUSTER MOUNTAIN UNIT
LEA COUNTY, NEW MEXICO
LAND OWNERSHIP MAP
SCALE: 1" = 4000'
Nov. 14, 1965

Original In Place
Custer No. in Unit #.

Material Balance Estimate:

The material balance estimate of original gas in place, 18.6 MMMCF, is shown graphically on the attached plot of pressures versus cumulative production.

<u>Cumulative Gas Production, MCF</u>	<u>Bottom Hole Pressure, psia</u>	<u>Compressibility Factor, Z</u>	<u>BHP/Z</u>
8,200	9062	1.339	6768
90,120	8946	1.329	6731
879,413	8023	1.247	6444

Volumetric Estimate:

Porsity	77
Water Saturation	50
Reservoir Temperature	640 Degrees R
Base Temperature	520 Degrees R
Original Reservoir Pressure	9062 psia
Base Pressure	14.65 psia
Compressibility Factor	1.339
Net Pay Thickness	28 feet

$$G = \frac{(43,560) (640) (28) (.01) (1-.30)}{(14.65) (640)} \times \frac{9062}{1.339}$$

$$G = 14.2 \text{ MMMCF/640 acres}$$

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
Appr	EXHIBIT NO. 4
CASE NO.	3492

MIDWEST OIL CORPORATION
Custer Mountain Unit #1
Cinta Rojo Marrow Gas Pool
Lea County, New Mexico

WELL DATA

LOCATION: Unit K, Section 9, T-24-S, R-35-E, Lea County, New Mexico.
COMPLETION DATE: 5-17-64
PRODUCING ZONE AND INTERVALS: Marrow Sand - 14,036' to 14,288'
INITIAL POTENTIAL: AOF 8000 MCFPD GOR 139,450 cuft/bbls.

PRODUCTION RECORD

<u>Date</u>	<u>Gas, MCF</u>	<u>Condensate, bbls.</u>	<u>Remarks</u>
April 6 to 11, 1964	8,200	Unknown	Back pressure test and build up test I
April 14 to June 12, 64	81,920	Unknown	Build up test II
August 9, 1965 to Feb. 16, 66	789,293	6111	Connected to EPNG 8-9-65 Build up test III.
April 20 to Oct. 1, 1966	<u>166,985</u>	<u>1633</u>	
TOTAL----- 1,046,398		7744	

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 3092

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BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO. 302

GAS PURCHASE AGREEMENT

THIS AGREEMENT, made and entered into on this the _____ day of _____, 1964, by and between EL PASO NATURAL GAS COMPANY, a Delaware corporation, hereinafter called "Buyer", and MIDWEST OIL CORPORATION

_____, hereinafter called "Seller",

W I T N E S S E T H:

That, in consideration of the mutual covenants and agreements herein contained the parties hereto agree as follows:

ARTICLE I

Definitions

Section 1. The term "Seller's properties" as used in this agreement shall mean Seller's interest in the properties described in Exhibit "A" hereto attached and hereby made a part hereof.

Section 2. The term "gas well" or "well" as used in this agreement shall mean any well located on Seller's properties completed in the Morrow Sand Formation classified as a gas well by the New Mexico Oil Conservation Commission or other governmental authority having jurisdiction.

Section 3. The term "gas" or the term "natural gas" as used in this agreement shall mean natural gas produced from any well classified as a gas well by the New Mexico Oil Conservation Commission or other governmental authority having jurisdiction.

Section 4. The term "day" as used in this agreement shall mean a period of twenty-four (24) consecutive hours beginning at seven (7:00) o'clock A.M.

Section 5. The term "month" as used in this agreement shall mean the period beginning at seven (7:00) o'clock A.M. on the first day of a calendar month and ending at seven (7:00) o'clock A.M. on the first day of the next succeeding calendar month.

Section 6. The term "year" as used in this agreement shall mean the period beginning at seven (7:00) o'clock A.M. on the first day of a calendar year and ending at seven (7:00) o'clock A.M. on the first day of the next succeeding calendar year; provided, however, that the period from the date of first deliveries of gas hereunder until the first day of the next succeeding calendar year shall be deemed to be a year, and the period from seven (7:00) o'clock A.M. on the first day of the last calendar year during the term of this agreement until seven (7:00) o'clock A.M. on the day next succeeding the day when this agreement terminates shall be deemed to be a year.

ARTICLE II

Preliminary Requirements

Section 1. Promptly after the date of this agreement, both Buyer and Seller shall, respectively, make such applications and filings to and with appropriate governmental agencies, including, but not limited to, the Federal Power Commission, as may be required on the part of each such respective party in order to procure such Certificates of Public Convenience and Necessity, government

authorizations, permits and rights as are necessary for such party to perform its obligations under this agreement. As each party receives and accepts such Certificates of Public Convenience and Necessity, government authorizations, permits and rights, all in form and substance satisfactory to it, required or otherwise necessary for it to perform its obligations under this agreement, it shall forthwith so notify the other party in writing. Acceptance by either party of emergency or temporary Certificates of Public Convenience and Necessity, government authorizations, permits or rights, even though the party accepting the same shall act thereunder, shall not within the meaning of this section constitute receipt of a Certificate of Public Convenience and Necessity, government authorization, permit or right in form and substance satisfactory to such party unless such party shall notify the other party in writing that it waives all objections to the form or nature of the same.

Section 2. If on or before one hundred eighty (180) days from the date of this agreement Buyer and Seller shall not have received and accepted all of the Certificates of Public Convenience and Necessity, governmental authority, permits and rights referred to in Section 1 of this article, then either Buyer or Seller may, at any time thereafter while such condition continues, give written notice to the other party that it desires to terminate this agreement. If any such notice is given this agreement shall terminate thirty (30) days after the date on which such notice is given unless at the end of such thirty (30) day period Buyer and Seller shall have

received and accepted all of the Certificates of Public Convenience and Necessity, governmental authority, permits and rights referred to in Section 1 of this article. If this agreement shall terminate pursuant to the provisions of this section neither Buyer nor Seller shall thereafter have any further liability under this agreement to the other.

Section 3. If Buyer and Seller shall receive and accept all of the Certificates of Public Convenience and Necessity, governmental authority, permits and rights referred to in Section 1 of this article prior to any termination of this agreement pursuant to the provisions of Section 2 of this article, Buyer and Seller shall promptly thereafter proceed, at each party's sole cost and expense, to construct such facilities as may be required on the part of each such respective party to perform its obligations under this agreement. All such construction shall be prosecuted with diligence to completion, and upon completion of such facilities first delivery of gas shall commence under this agreement.

ARTICLE III

Quantities

Section 1. Commencing as of the date of the first deliveries of gas hereunder and continuing during the term hereof, Seller shall sell and deliver to Buyer from Seller's properties, and Buyer shall purchase and receive from Seller from said properties and pay for, or pay for whether or not received, during each year, subject to the provisions of Section 2 of this Article III, a minimum quantity of gas per day determined as provided in Article IV of this agreement.

Such minimum quantity shall, subject to Section 2 of Article IV hereof, be averaged over each year.

Section 2. Should Buyer fail to purchase and receive from Seller during any year the minimum quantities of gas which Buyer was required to purchase and receive from Seller during such year pursuant to the provisions of Section 1 of this Article III, which failure was not due to physical nonavailability of gas, causes within the control of Seller, regulation by governmental authority or force majeure intervention, then within thirty (30) days after the end of such year Buyer shall pay Seller for that quantity of gas which represents the difference between the minimum quantities of gas which Buyer was required hereunder to purchase and receive from Seller during such year and the quantities of gas actually purchased and received by Buyer from Seller's properties during such year. Payment shall be made at the average price, weighted as to volume, paid by Buyer hereunder for gas during such year. If in any year Buyer fails to purchase and receive from Seller's properties during such year the minimum quantities of gas which Buyer was required to purchase and receive from Seller's properties during such year pursuant to the provisions of Section 1 of this Article III, Buyer shall have the right at any time during the remaining term of this agreement to take and receive the quantity of gas which it paid for but did not receive during the year when such deficiency occurred and shall be required to pay therefor only the difference, if any, between the price in effect under this agreement at the time of delivery and the amount actually paid for the deficiency; provided,

however, that the quantity of gas so taken by Buyer shall not be treated as a part of the minimum quantities of gas which Buyer is obligated to purchase and receive hereunder during any of such succeeding years.

Section 3. If the daily quantity of gas available from Seller's properties shall, due to (a) causes within the control of Seller, (b) regulation by governmental authority, or (c) force majeure intervention, be less than one hundred thirty-three per cent (133%) of the minimum daily quantity of gas Buyer is then obligated to purchase under the provisions of this agreement, then while such condition exists Buyer shall be obligated to purchase and receive from Seller only a minimum daily quantity of gas equal to seventy-five per cent (75%) of the daily quantity of gas actually available from Seller's properties.

ARTICLE IV

Minimum Purchase Obligations

Section 1. Commencing with the date of first deliveries of gas hereunder, Buyer shall purchase from Seller's properties a minimum quantity of two million (2,000,000) cubic feet of gas per day from each gas well located on Seller's properties; provided, however, that:

(1) If any such gas well shall have less than six hundred forty (640) acres allocated thereto, the minimum quantity as to such gas well shall be reduced by multiplying the minimum quantity by a fraction, the numerator of which shall be the number of acres allocated to such gas well, and the denominator of which shall be

six hundred forty (640).

(11) Acreage shall be allocated to Seller's wells by Seller, and the acreage so allocated shall be acreage described in Exhibit "A" hereto. The acreage allocated by Seller to a particular gas well shall be continuous and contiguous, and shall either be covered by a single lease or unitized so that such acreage may be operated for gas as though it were covered by a single lease. No more than six hundred forty (640) acres shall ever be allocated to a gas well, and the acreage allocated thereto shall be as nearly in a compact and rectangular form as is reasonably possible, with no outside boundary longer than five thousand two hundred eighty feet (5,280'). Acreage allocated to a particular gas well shall not be allocated to another gas well or wells producing from the same reservoir. Seller shall have the right to change acreage allocations from time to time, and shall advise Buyer in writing of each acreage allocation made by Seller hereunder.

Section 2. Buyer shall not be required without its consent to purchase from Seller's properties during any year more gas than is allocated for gas proration purposes to the wells on Seller's properties under the laws, orders, rules and regulations of governmental authority. Accordingly, if the gas so allocated is not sufficient to permit Buyer to purchase and receive during any year the minimum quantities of gas which Buyer is otherwise required hereunder to purchase and receive during such year from Seller's properties, Buyer shall have no liability hereunder to Seller with respect to the deficiency, and Buyer shall not be

required to pay for the same; provided, however, that the provisions of this Section 2 shall not, with respect to those of Seller's wells which are subject to field wide proration, apply during any year to the extent that Buyer's nominations of estimated requirements with respect to such wells, averaged over such year, are below the minimum quantities of gas which Buyer is required hereunder to purchase and receive from such wells during such year; provided further, however, that in the event Buyer's nominations of estimated requirements with respect to such wells, averaged over such year, are below the minimum quantities of gas which Buyer is required to purchase and receive from such wells during such year, Buyer's minimum obligation for such year shall be that volume which would have represented Buyer's obligation if Buyer's nominations had been equal to its minimum hereunder.

ARTICLE V

Quality

Section 1. The gas to be delivered by Seller to Buyer under the terms of this agreement shall be natural gas as produced in its natural state from Seller's wells and shall conform to the following specifications (determination as to conformity of the gas with these specifications shall be made in accordance with the generally accepted procedures of the industry):

(a) Liquids: The gas shall be free from hydrocarbons in their liquid state at the temperature and pressure at which delivered, and such gas shall not contain more than nine pounds (9#) of water per one million (1,000,000) cubic feet of gas as determined by dew

point apparatus approved by the United States Bureau of Mines. Seller shall install, at its sole cost and expense, all separators and other devices which may be found necessary to conform the gas to the specifications set forth in this subsection (a).

(b) Sulphur. The gas shall not contain more than one (1) grain of hydrogen sulphide nor more than twenty (20) grains of total sulphur per one hundred (100) cubic feet.

(c) Oxygen: The gas shall not at any time have an oxygen content in excess of two-tenths (0.2) of one per cent (1%) by volume, and Seller shall make every reasonable effort to keep the gas free of oxygen.

(d) Carbon Dioxide: The gas shall not have a carbon dioxide content in excess of one per cent (1%) by volume.

(e) Dust, Gums, etc.: The gas shall be commercially free of dust, gums and other solid matter.

(f) Heating Value: The total gross heating value of the gas deliverable hereunder shall not be less than one thousand (1,000) British thermal units per cubic foot.

Section 2. Buyer shall have the right to refuse to accept any gas which at any time does not meet any of the specifications set forth in this Article V. Seller shall have the right, at its option, at any time within ninety (90) days after Buyer refuses to accept delivery of such gas, to commence construction of treating facilities necessary to cause such gas to meet the requirements of this article, and shall pursue the construction diligently to completion. In such event, Buyer shall continue

obligated to purchase gas hereunder so long as the gas continues to meet the requirements of this article. In the event Buyer shall refuse to accept deliveries of gas hereunder and Seller shall not elect to install treating facilities as above provided, then this agreement may be canceled by Seller if Seller shall give Buyer written notice thereof and Buyer shall not within sixty (60) days thereafter agree to treat the gas to meet said specifications, in which case there shall be deducted from the price otherwise payable hereunder either Buyer's actual cost incurred in so treating said gas or one cent (1¢) per one thousand (1,000) cubic feet of said gas, whichever is the lesser. Except as is otherwise provided in subsection (a) of Section 1 of this Article V, Seller shall never be required to treat the gas to render it merchantable.

Section 3. Within the limits of the minimum heating value specifications set forth above, Seller shall have the right before delivery of gas to Buyer to remove from the gas delivered hereunder any constituents thereof other than methane, and shall have the right to remove such methane as is necessarily removed from the gas in the process of removing other constituents.

ARTICLE VI

Delivery Point

The point of delivery for all gas to be sold and delivered to Buyer hereunder shall be at the inlet of the meter station to be installed and operated by Buyer at a mutually agreeable point on Buyer's existing pipeline in the Northeast Quarter (NE/4) of Section 11, Township 24 South, Range 36 East, Lea County, New Mexico. Title to

and ownership of all gas so delivered hereunder shall pass to and vest in Buyer at the point of delivery.

ARTICLE VII

Delivery Pressure

Section 1. The gas to be purchased by Buyer hereunder shall be delivered by Seller under sufficient natural well flowing pressures to permit delivery of such gas into Buyer's pipeline system at the point of delivery specified in Article VI hereof. Buyer shall have the right to operate its pipeline system at said point of delivery at pressures up to, but not exceeding, six hundred fifty pounds (650#) per square inch gauge.

Section 2. If at any time well flowing pressures shall be insufficient to permit deliveries of gas into Buyer's pipeline system at said point of delivery against the pressure maintained therein, then Seller (subject to the right granted Buyer pursuant to Article XVI hereof), at its option and own expense, may, by compression, increase the pressure of such gas to make the same deliverable hereunder; in which event, Buyer shall continue obligated to purchase gas hereunder so long as the gas so delivered continues to meet the requirements of this article and the other requirements of this agreement. As to all such gas so delivered by Seller, the temperature thereof shall not exceed one hundred twenty degrees (120°) Fahrenheit.

Section 3. In the event Seller shall not elect to install such compression facilities as provided for in Section 2 of this article, then this agreement may be canceled by Seller if Seller shall give Buyer written notice thereof, and Buyer shall not within

sixty (60) days thereafter agree to increase the pressure of such gas by compression to make the same deliverable into Buyer's pipeline system at the point of delivery, or, in the alternative, to connect such gas to a lower pressure gathering system in the area operated by Buyer; and, in which event, an appropriate adjustment shall be made in the price of the gas so delivered, which said adjustment shall be acceptable to Seller and sufficient to reimburse Buyer for the reasonable cost of the compression so supplied.

ARTICLE VIII

Responsibility

Buyer shall not be responsible for the gas prior to its delivery hereunder and Seller shall hold Buyer harmless against any damage or injury caused thereby until same has been delivered to Buyer at the delivery point specified in Article VI hereof, after which delivery Buyer shall be deemed in exclusive control and possession thereof and responsible for said gas and shall hold Seller harmless against any injury or damage caused thereby.

ARTICLE IX

Meters

Section 1. Buyer, at its sole cost and expense, shall install, maintain and operate at the delivery point a standard type orifice meter or meters for the measuring of the quantity of gas delivered hereunder. Orifice meters shall be installed and operated in accordance with the specifications prescribed in Gas Measurement Committee Report No. 3, dated April, 1955, of the Natural Gas Department of the American Gas Association, as supplemented

and modified from time to time. Buyer shall cause the charts on such meters to be changed each eight (8) days and at the end of each month, or at such other times as may be agreed upon by the parties hereto. The respective meter, meter readings and meter charts shall be accessible at all reasonable times to inspection and examination by Seller.

Section 2. From time to time and at least once in each three (3) months, the accuracy of Buyer's measuring equipment shall be verified by and at the expense of Buyer. If either party at any time shall notify the other that it desires a special test of any meter, the other party shall cooperate to secure an immediate verification of the accuracy of such meter and joint observation of any adjustments. If any such test shall be requested by Seller and upon such test, the measuring equipment shall be found to be registering correctly, the cost of such test shall be charged to Seller, otherwise the cost of all such tests shall be borne by Buyer. Buyer shall give notice to Seller of the time of all tests made pursuant to this article in order that Seller may conveniently have its representative present. Calibration and adjustment of Buyer's meters and changing of charts shall be done only by Buyer.

Section 3. If, upon any test, the percentage of inaccuracy shall be two per cent (2%) or more, the registration of such meter shall be corrected at the rate of such inaccuracy for any period which is definitely known or agreed upon, but in case the period is not definitely known or agreed upon, then for a period extending back one-half (1/2) of the time elapsed since the date of the

last calibration. Following any test, metering equipment found inaccurate shall be immediately restored by Buyer as closely as possible to a condition of accuracy. If, for any reason, any meter is out of service or out of repair so that the amount of gas delivered cannot be estimated or computed from the reading thereof, the amount of gas delivered through the period such meter is out of service or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

- a. By using the registration of Seller's check meter if installed and accurately registering.
- b. By correcting the error if the percentage of error is ascertainable by calibration test or mathematical calculation.
- c. By estimating the quantity of deliveries by deliveries during preceding periods under similar conditions when the meter was registering accurately.

Section 4. Seller may, at its option and expense, install and operate check meters to check Buyer's meters, but measurement of gas for the purpose of this agreement shall be by Buyer's meter, except as hereinabove specifically provided to the contrary. Such check meters and equipment shall be so installed as not to interfere with the operation of the meters to be installed and maintained by Buyer at or near the points of delivery.

ARTICLE X

Units of Volume

Section 1. The unit of volume for all purposes hereunder

(except for the computation of volumes for the application of the price provisions of Article XII hereof and for computation of certain "quality" values under the provisions of Article V hereof) shall be one thousand (1,000) cubic feet of gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of fifteen and twenty-five thousandths pounds (15.025#) per square inch absolute.

Section 2. The unit of volume for the application of the price provisions of Article XII hereof shall be one thousand (1,000) cubic feet of gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of fourteen and sixty-five hundredths pounds (14.65#) per square inch absolute.

Section 3. The unit of volume for the determination of the gross heating value of the gas under subsection (f) of Section 1 of Article V hereof shall be the amount of gas, on a dry basis, which would occupy a volume of one (1) cubic foot at a temperature of sixty (60) degrees Fahrenheit and under a pressure equivalent to thirty (30) inches of mercury at thirty-two (32) degrees Fahrenheit.

The unit of volume for determination of the quality values of the gas specified under subsections (b), (c) and (d) of Section 1 of Article V hereof shall be one (1) cubic foot at a temperature of sixty (60) degrees Fahrenheit and under a pressure equivalent to thirty (30) inches of mercury at thirty-two (32) degrees Fahrenheit.

ARTICLE XI

Gas Measurement

Section 1. The volumes of gas delivered hereunder shall be computed in accordance with the specifications prescribed in

Gas Measurement Committee Report No. 3, dated April, 1955, of the Natural Gas Department of the American Gas Association, as supplemented and modified from time to time, applied in a practical and appropriate manner, and appropriate correction shall be made for deviation of the gas from Boyle's Law in accordance with said Gas Measurement Committee Report No. 3.

Section 2. For the purpose of measurement, the average absolute atmospheric (barometric) pressure shall be assumed to be thirteen and two tenths pounds (13.2#) to the square inch, regardless of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. For meters of the orifice type, the following factors shall be given due consideration:

a. The temperature of the gas flowing through Buyer's meters shall be obtained by the use of a recording thermometer so installed by Buyer that it may properly record the temperature of such gas. The arithmetical average of the hourly temperature during the period gas passed shall be used to make proper computations of volume hereunder.

b. The specific gravity of the natural gas shall be determined by Buyer each six (6) months on or as near the first of each six (6) months' period as practicable, by means of an Edwards Balance or by such other method as may be agreed upon by the parties hereto. Such test shall determine the specific gravity to be used in computations for the measurement of gas delivered during such six (6) months' period.

Section 3. Buyer shall give notice to Seller of the time of all tests of gas delivered hereunder or of any equipment used in measuring or determining the nature or quality of such gas, in order that Seller may conveniently have its representative present. Should Seller not be satisfied with any such tests, it shall so notify Buyer and Buyer shall perform such retests as may be necessary to assure an accurate test.

ARTICLE XII

Price

Buyer shall pay Seller for gas purchased hereunder in accordance with the following schedule:

(1) For the period commencing on the date of first delivery and continuing until August 1, 1966, sixteen cents (16¢) per one thousand (1,000) cubic feet.

(2) For the three (3) year period commencing August 1, 1966, eighteen cents (18¢) per one thousand (1,000) cubic feet.

(3) For the five (5) year period commencing August 1, 1969, nineteen cents (19¢) per one thousand (1,000) cubic feet.

(4) For the next five (5) year period and for each succeeding five (5) year period thereafter, the price to be paid by Buyer to Seller for all gas delivered hereunder shall be increased one cent (1¢) per one thousand (1,000) cubic feet more than the price in effect at the beginning of the previous five (5) year period.

ARTICLE XIII

Billing and Payment

Section 1. On or before the tenth (10th) day of each calendar month, Buyer shall render to Seller a statement showing the amount of gas purchased by Buyer hereunder during the preceding calendar month, and payment for such gas less all applicable taxes paid by Buyer for Seller's account shall be made by Buyer to Seller on or before the twenty-fifth (25th) day of the calendar month in which such statement is rendered.

Section 2. Upon request, Buyer shall furnish Seller the measurement charts applicable to any monthly statement. Seller shall return to Buyer all charts after a thirty (30) day period.

Section 3. Any error or discrepancy in charts or statements furnished pursuant to the above shall be promptly reported to Buyer and Buyer shall make proper adjustment thereof within thirty (30) days after final determination of the correct volumes or values involved; provided, however, that if no such errors or discrepancies are reported to Buyer within two (2) years from the date of such chart or statement the same shall be conclusively deemed to be correct.

Section 4. Seller shall have access to Buyer's records and books at all reasonable hours so far as they affect measurement and settlement for gas sold hereunder.

ARTICLE XIV

Taxes

Section 1. Subject to the other provisions of this

article, Seller shall pay or cause to be paid all taxes and assessments imposed on Seller with respect to the gas delivered hereunder prior to its delivery to Buyer, and Buyer shall pay or cause to be paid all taxes and assessments imposed upon Buyer with respect to gas delivered hereunder after its receipt by Buyer. Neither party shall be responsible or liable for any taxes or other statutory charges levied or assessed against any of the facilities of the other party used for the purpose of carrying out the provisions of this agreement.

Section 2. Any sales, transaction, occupation, service, production, severance, gathering, transmission, export or excise tax, assessment or fee levied, assessed or fixed by the United States, the State of New Mexico, or other governmental authority and taxes of a similar nature or equivalent in effect (not including income, excess profits, capital stock, franchise or general property taxes) in respect of or applicable to the gas delivered hereunder to Buyer in addition to or greater than those, if any, being levied, assessed or fixed on the date of this agreement in respect of or applicable to such gas and which Seller may be liable for, either directly or indirectly, or through any obligation to reimburse others, are hereinafter collectively referred to as an "additional tax". It is expressly understood and agreed between the parties hereto that Buyer shall, subject to the conditions hereinafter set forth, pay to Seller three-fourths (3/4ths) of any such additional tax. Should Seller so become liable for any such additional tax, Seller shall notify Buyer immediately. Within ninety (90) days after the

end of each calendar month, Seller shall prepare and submit to Buyer a statement setting forth the amount of any such additional tax that Seller has paid during such calendar month, and within thirty (30) days after submission of such statement, adjustment between the parties hereto shall be made by Buyer reimbursing Seller to the extent of three-fourths (3/4ths) of the amount of any such additional tax which Seller shall have so paid. The tax reimbursement herein provided for shall apply to the total amount of money Seller is required to pay by virtue of any such additional tax but shall not apply to any delinquent interest or penalty payments that may be applicable to any such additional tax. Taxes applicable to any royalty, overriding royalty, production payment or similar interest shall be considered to be covered by the provisions of this Section 2 only if the reimbursement made by Buyer to Seller with respect thereto is passed on by Seller to the owner of such royalty, overriding royalty, production payment or similar interest.

ARTICLE XV

Term

This agreement shall be effective from the date hereof and shall remain in force for a period of twenty (20) years from the date of first delivery of gas hereunder.

ARTICLE XVI

Regulation of Flow

Buyer shall have the right at any and all times to regulate the flow of gas at the delivery point hereunder to meet its fluctuating demands, subject, however, to Seller's control to the extent

necessary to prevent such excessive rates of withdrawal as in Seller's opinion may result in well or reservoir damage.

ARTICLE XVII

Rights-of-Way

Seller hereby grants and assigns to Buyer, insofar as Seller has the right so to do, all requisite easements and rights-of-way over, across and under properties covered hereby owned by or under lease to Seller with full right of ingress and egress for the purpose of constructing and operating gas pipelines, meter stations and other equipment necessary or convenient for carrying out the terms of this agreement and Buyer's obligations hereunder. If Buyer shall deliver to Seller field notes describing any such easement or right-of-way, Seller will execute and deliver to Buyer an appropriate written instrument confirming such easement or right-of-way as so described. Buyer shall have the right to remove, repair and replace all or any part of Buyer's pipelines, meter stations, and other equipment and facilities, at any time during, and within a reasonable time after, the expiration of the term of this agreement.

ARTICLE XVIII

Title

Seller hereby warrants title to the gas sold by it hereunder and its right to sell the same and warrants that all such gas is owned by Seller free from all liens, encumbrances and adverse claims, including, but not limited to, liens to secure payment of production taxes, severance taxes and other taxes. As between Buyer and Seller, Seller shall at all times have the obligation to

make settlement for all royalties, overriding royalties and other payments due to the owners of the mineral, royalty and other interests under Seller's leases, as modified by such assignments, unitization agreements and other documents as may appear of record or otherwise be binding upon Seller, and to make settlements with all other persons having any interest in the gas (or the proceeds of the sale thereof) sold by Seller hereunder. Seller shall save and hold Buyer free and harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of adverse claims of any and all persons to the gas sold by it hereunder or to royalties, overriding royalties or other payments with respect thereto, or to taxes, licenses, fees or charges thereon which are applicable before the title to the gas passes to Buyer or which may be levied and assessed upon the sale thereof to Buyer, subject, however, to the other provisions of this agreement. In case of any adverse claim to the title of any gas bought and sold hereunder, Buyer may, without otherwise affecting this agreement, retain the purchase price thereof up to the amount of such claim, without interest, until such claim is finally determined or until Seller shall furnish Buyer a bond, in form and with sureties acceptable to Buyer, conditioned to save Buyer harmless.

ARTICLE XIX

Force Majeure

Except for Buyer's obligations to make payment for gas delivered hereunder, neither party hereto shall be liable for any failure to perform the terms of this agreement when such failure

is due to "force majeure" as hereinafter defined. The term "force majeure" as employed in this agreement shall mean acts of God, strikes, lockouts or industrial disputes or disturbances, civil disturbances, arrests and restraint from rulers or people, interruptions by government or court orders, present and future valid orders of any regulatory body having proper jurisdiction, acts of the public enemy, wars, riots, blockades, insurrections, inability to secure labor or inability to secure materials, including inability to secure materials by reason of allocations promulgated by authorized governmental agencies, epidemics, landslides, lightning, earthquakes, fire, storm, floods, washouts, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or pipelines, the making of repairs or alterations to pipelines or plants, or any other cause, whether of the kind herein enumerated or otherwise, not reasonably within the control of the party claiming "force majeure". Upon the occurrence of an event constituting "force majeure", the same shall, so far as possible, be remedied with all reasonable dispatch. The settlement of strikes or lockouts or industrial disputes or disturbances shall be entirely within the discretion of the party having the difficulty, and the above requirement that any "force majeure" shall be remedied with all reasonable dispatch shall not require the settlement of strikes, lockouts or industrial disputes or disturbances by acceding to the demands of any opposing party therein when such course is inadvisable in the discretion of the party having the difficulty.

ARTICLE XX

Rights of Seller

Seller expressly reserves for itself, its successors and assigns, the following prior rights with respect to the gas subject hereto:

(a) The right to deliver to lessors under any of the leases subject hereto, gas required in kind to meet the requirements of lessee's obligations under such leases to furnish gas to such lessors.

(b) The right to use gas reasonably required to develop and operate Seller's properties, excluding, however, gas for gas-lifting oil and for pressure maintenance and repressuring operations.

(c) Subject to the other provisions of this agreement, the control, management and operation of the properties subject to this agreement shall be and remain the exclusive right of Seller. Seller may, in its sole uncontrolled discretion and as it deems advisable, drill new wells, repair or rework old wells, renew or extend in whole or in part any lease or unit, and abandon any well or surrender, terminate or release all or any part of any lease (in which case this agreement shall terminate with respect to such lease) which in Seller's sole opinion is incapable under normal production methods of producing gas in paying or commercial quantities.

(d) The right from time to time to alter any gas unit by increasing or decreasing the surface acreage contained therein or to pool or combine any lease or unit or any part thereof with other properties or to include in any unit any interest in lands

covered by such unit not theretofore included in such unit; and in the event of any pooling, unitization or change in any unit, this agreement shall apply to the interest of Seller in the wells subject hereto and to the interest of Seller in the wells on the newly formed or altered unit or units.

All gas taken by Seller pursuant to subparagraphs (a) and (b) above shall be taken upstream from Buyer's metering facilities.

ARTICLE XXI

Rules and Regulations

This agreement is subject to all present and future valid laws and valid orders, rules and regulations of the United States, the State of New Mexico, or any duly constituted agency thereof.

ARTICLE XXII

Notices

Notices to be given hereunder shall be deemed sufficiently given and served when and if deposited in the United States mail, postage prepaid and registered, addressed to Seller at _____

1500 Wilco Building, Midland, Texas 79701

_____, or to Buyer at P. O. Box 1492, El Paso, Texas 79999, as the case may be, or to such other address as either party shall respectively hereafter designate in writing.

Routine communications, including monthly statements and payments shall be considered as duly delivered when mailed by either registered mail or ordinary first class mail, postage prepaid.

ARTICLE XXIII

Successors and Assigns

This agreement shall bind and benefit the parties hereto and their respective successors and assigns, provided that no conveyance or transfer of any interest of either party shall be binding upon the other party until such other party has been furnished with written notice and true copy of such conveyance or transfer; provided, further, that either Buyer or Seller, or both, may assign its right, title and interest in, to and by virtue of this agreement, including any and all extensions, renewals, amendments and supplements thereto, to a trustee or trustees, individual or corporate, as security for bonds or other obligations or securities, without such trustee or trustees assuming or becoming in any respect obligated to perform any of the obligations of the assignor, and if any such trustee be a corporation, without its being required by the parties hereto to qualify to do business in the State of New Mexico, but no such assignment shall serve to relieve the assigning party of its obligations hereunder.

ARTICLE XXIV

Topical Headings

The topical headings used herein are inserted for convenience only and shall not be construed as having any substantive significance or meaning whatsoever or as indicating that all of the provisions of this agreement relating to any particular topic are to be found in any particular article.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly executed in duplicate originals, on this the day and year first above written.

ATTEST:

Assistant Secretary

ATTEST:

Assistant Secretary

"BUYER"

EL PASO NATURAL GAS COMPANY

By _____
Vice President

"SELLER"

MIDWEST OIL CORPORATION

By _____
Vice President