

CASE 6709: HNG OIL COMPANY FOR COMPUL-
SORY POOLING, LEA COUNTY, NEW MEXICO

CONTINUED TO

NOVEMBER 14

Case Number

6709

Application

Transcripts.

Small Exhibits

ETC.



BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

POST OFFICE BOX 2088
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SANTA FE, NEW MEXICO 87501
(505) 827-2434

January 18, 1980

Re: CASE NO. 6709
ORDER NO. R-6256

Mr. William F. Carr
Campbell and Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Applicant:

ING Oil Company

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other Clifford Atkinson

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6709
Order No. R-6256

APPLICATION OF HNG OIL COMPANY FOR
COMPULSORY POOLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 14, 1979, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 16th day of January, 1980, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, HNG Oil Company, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 16 South, Range 35 East, NMPM, Shoe Bar Gas Field, Lea County, New Mexico.

(3) That the applicant co-owns the NE/4 of said Section 32 with certain other parties and seeks an order pooling said quarter section with the NW/4 of said Section 33 which is owned by Exxon Company, USA to form a 320-acre gas spacing and proration unit to be dedicated to a well which applicant proposes to drill at a standard location for said unit at a point 660 feet from the North line and 1980 feet from the West line of said Section 33.

(4) That under applicant's proposal, HNG et al would own a 50 percent interest in the proposed unit and Exxon Company, USA would own a 50 percent interest.

-2-

Case No. 6709
Order No. R-6256

(5) That according to the evidence in this case, approximately 1/3 of the potential reserves attributable to applicant's proposed well underly the NE/4 of Section 33 and approximately 2/3 of said reserves underly the NW/4 of the section.

(6) That Exxon Company, USA opposed the proposed unit at the hearing of this case and declared that it has budgeted, and is committed to, the drilling of an Atoka-Morrow test well at a standard location in the SW/4 NW/4 of Section 33, to which it would dedicate the W/2 of the section.

(7) That approval of HNG's application in the instant case would impair the correlative rights of Exxon Company, USA inasmuch as said company would be contributing 2/3 of the reserves to the well but would be credited with only 1/2 the well's production.

(8) That alternate drilling and acreage dedication arrangements are available to HNG by which it can protect its correlative rights and those of its co-owners.

(9) That denial of the application will serve to protect correlative rights and will not cause waste, and such denial should be ordered.

IT IS THEREFORE ORDERED:

(1) That the application of HNG Oil Company for an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 16 South, Range 35 East, NMPM, Shoe Bar Gas Field, Lea County, New Mexico, is hereby denied.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



JOE D. RAMEY
Director

fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
14 November 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of HNG Oil Company for
compulsory pooling, Lea County, New
Mexico.

CASE
6709

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

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For the Applicant, HNG:

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CAMPBELL & BLACK P. A.
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Santa Fe, New Mexico 87501

For Exxon U.S.A.:

Clifford Atkinson, Esq.
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Albuquerque, New Mexico

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A P P E A R A N C E S C O N T ' D

For Exxon U.S.A.: Jack A. Dalious, Esq.
 Division Attorney
 Southwest and Mid-Continent
 Division
 Exxon Co. U.S.A.

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1 MR. NUTTER: Call next Case Number 6709.

2 MR. PADILLA: Application of HNG Oil Com-
3 pany for compulsory pooling, Lea County, New Mexico.

4 MR. CARR: May it please the Examiner, I
5 am William F. Carr, Campbell and Black, P. A., appearing on
6 behalf of the applicant. I have two witnesses that will
7 need to be sworn.

8 MR. NUTTER: Any other appearances in this
9 Case 6709?

10 MR. ATKINSON: My name is Clifford Atkinson,
11 appearing from Modrall Law Firm for Exxon.

12 MR. NUTTER: Will you have any witnesses,
13 Mr. Atkinson?

14 MR. ATKINSON: Yes, sir, we'll have two
15 witnesses.

16 MR. NUTTER: Would all the witnesses please
17 stand and be sworn at the same time, please?

18
19 (Witnesses sworn.)

20
21 MR. CARR: At this time I would call Mr.
22 Parker.

23 (There followed a discussion
24 off the record.)

25 MR. NUTTER: We'll recess the hearing

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1 until the morning, then, and we're on Case 6709.

2

3

(Thereupon the evening recess

4

was taken. Thereafter on the 15th

5

day of November, 1979, the hearing

6

was resumed, as follows, to-wit:)

7

8

MR. NUTTER: The hearing will come to order,

9

please. I believe we're on Case Number 6709. WE have called

10

the case and I believe the witnesses have been sworn, have

11

they not, all four witnesses.

12

Mr. Carr, would you proceed?

13

MR. CARR: I'd like to call Raymond Parker.

14

15

RAYMOND PARKER

16

being called as a witness and having been duly sworn upon his

17

oath, testified as follows, to-wit:

18

19

DIRECT EXAMINATION

20

BY MR. CARR:

21

Q

Will you state your full name and place of

22

residence?

23

A

I'm Raymond Parker. I live in Midland,

24

Texas, at 2007 North H.

25

Q

Mr. Parker, by whom are you employed and in

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1 what capacity?

2 A I'm employed as a land consultant by HNG
3 Oil Company, Midland, Texas.

4 Q Have you previously testified before this
5 Commission, had your credentials accepted and made a matter
6 of record?

7 A Yes, I have.

8 Q Are you familiar with the application of
9 HNG in this case?

10 A I am.

11 MR. CARR: Are the witness' qualifications
12 acceptable?

13 MR. NUTTER: Yes, they are.

14 Q Mr. Parker, will you please refer to what
15 has been marked for identification as HNG's Exhibit Number
16 One, and explain to the Examiner what it is and what it shows?

17 A Exhibit One is a land plat of the Shoe Bar,
18 so-called Shoe Bar, South Shoe Bar Field area, showing wells
19 drilled in the area together with owners of leasehold, a
20 State approved Shoe Bar Unit, and a proposed 320-acre working
21 interest unit comprising the north half of Section 33, and
22 that's it.

23 Q Is the proposed location a standard location
24 for the north half of the unit?

25 A It is.

1 Q Now, Mr. Parker, if you created a unit out
2 of either the east half or the west half of this section,
3 how far from the north line of the section would you have to
4 drill to be at a standard location?

5 A A standard location would be 1980 from the
6 north line.

7 Q Now, looking at Section 33, is all of the
8 acreage in this section State land?

9 A It is all State land.

10 Q Now does this plat reflect other HNG wells
11 drilled in the area?

12 A It does.

13 Q I'd like to direct your attention to the
14 well drilled in the northeast quarter of Section 3, and ask
15 you to explain the circumstances surrounding the drilling of
16 this well.

17 A This was proposed joint venture --

18 MR. NUTTER: Where? Where, Mr. Carr?

19 MR. CARR: In the --

20 A East half of Section 33.

21 MR. CARR: In the east half, in the north-
22 east quarter of Section 33.

23 MR. NUTTER: Okay.

24 A The owners of the east half being HNG Oil
25 Company and Sol West, et al, entered into a working interest

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1 unit for the drilling of a Morrow test to be located 1980 from
2 the north and 660 from the east line of Section 23. The
3 well was drilled to a total depth of 13,000 feet. Tests were
4 made -- I won't go into the tests because I'm not qualified.
5 We'll refer that to Mr. Cherryhomes later.

6 Q All right.

7 A It was subsequently plugged as a dry hole.

8 Q And you were proposing to dedicate the east
9 half of Section 33 to that well?

10 A We were, yes.

11 Q Why are you now proposing to dedicate the
12 north half of the section?

13 A Yes, sir, we are.

14 Q And why is that?

15 A We feel that if we get closer to the north
16 line of the section we can make an Atoka well.

17 Q And Mr. Cherryhomes will testify as to the
18 reason for that.

19 A He will testify on that.

20 Q What interests have committed to this unit?

21 A The entire northeast quarter, the northeast
22 quarter of Section 33 is owned jointly by HNG Oil Company,
23 Tom Ingram, Sol West, the third, and Michael Shearn. HNG,
24 as operator for these people, are proposing this working
25 interest unit.

1 Q And that means you have 160 acres that have
2 not been committed.

3 A That's right.

4 Q And this is the Exxon acreage?

5 A That's right.

6 Q Have you given Exxon notice of your inten-
7 tion to develop the north half?

8 A Yes, we have.

9 Q Will you please refer to what has been
10 marked for identification as Exhibits Two, Three, and Four,
11 and explain to the Examiner what these are?

12 A Exhibit Number Two is a letter from HNG
13 Oil Company, dated August 16th, 1979, wherein we propose
14 the formation of a 320-acre working interest unit comprised of
15 the northeast section -- northeast quarter of Section 33,
16 16 South 35 East, Lea County. We set out the interest of
17 the parties. We attached later an AFE. We invited Exxon
18 to participate as a working interest owner or in lieu thereof,
19 farm out to the unit, reserving 1/16th of 8/8ths override
20 convertible to a 50 percent working interest upon payout of
21 the test well.

22 Q Now, attached to this letter is an AFE?

23 A There is, an AFE was attached to the letter
24 showing the cost of a dry hole to be \$729,713; a completed
25 well to be \$1,057,623.

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1 Q And then attached to that is a response of
2 Exxon to your proposal, is that correct?

3 A Right, response by Exxon by letter dated
4 September 25, 1979, wherein they advise that they did not
5 desire to join or farm out.

6 Q Now, Mr. Parker, do the costs reflected on
7 the AFE, are these costs in line with your experience in
8 drilling other wells in the area?

9 A Yes, sir, they are.

10 Q Will you please refer to what has been
11 marked Exhibit Number Five and review this for the Examiner?

12 A Exhibit Number Five is a form of COPAS
13 accounting procedure, the purpose of which is to show the
14 drilling well rate and the producing well rates, as shown
15 on --

16 Q Are you talking about, when you say pro-
17 ducing and drilling well rates, you're talking about the cost
18 overhead cost or administrative cost while drilling and pro-
19 ducing the well?

20 A This is right.

21 Q Are those contained in paragraph three on
22 page three?

23 A On page three.

24 Q And what are those figures?

25 A Well, a drilling well rate is \$2679; pro-

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1 ducing well rate, \$359.

2 Q. These are monthly figures?

3 A. That's monthly figures.

4 Q. Do you believe these figures are in line
5 with what is being charged by other operators in the area?

6 A. They are somewhat less than other operators
7 are charging in the same operation.

8 Q. Do you recommend that any order entered as
9 a result of this hearing incorporate these figures as appro-
10 priate costs?

11 A. Yes, sir, I do.

12 Q. Mr. Parker, does HNG request to be desig-
13 nated operator of this proposed well?

14 A. Yes, sir.

15 Q. In your opinion will granting this appli-
16 cation be in the interest of conservation, the prevention of
17 waste, and the protection of correlative rights?

18 A. Yes, sir.

19 Q. Were Exhibits One through Five either pre-
20 pared by you or have you reviewed them and can you testify
21 from your own knowledge as to their accuracy?

22 A. I can.

23 MR. CARR: At this time, Mr. Examiner, we
24 would offer HNG's Exhibits One through Five.

25 MR. NUTTER: Exhibits One through Five will

1 be admitted in evidence.

2 MR. CARR: I have nothing further of the
3 witness on direct.

4 MR. NUTTER: Are there any questions of the
5 witness?

6 MR. ATKINSON: Yes, sir, we have a few
7 questions.

8
9 CROSS EXAMINATION

10 BY MR. ATKINSON:

11 Q Mr. Parker, I'd like to refer you to the
12 application filed by HNG in this matter. I do not have an
13 additional copy of it. Do you have a copy?

14 A I have a copy, yes.

15 Q And I'd like to refer you to paragraph one
16 of that application. It's either stating there all or in
17 part that the applicant, HNG Oil Company, you would agree
18 with me, I guess, the applicant is HNG Oil Company?

19 A Yes, I will.

20 Q Is the owner of 50 percent of the working
21 interest in and under the north half of the said Section 33
22 and has the right to drill thereon. What you really meant
23 there is --

24 A This statement is not correct in that we
25 do not own 50 percent in the north half.

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1 Q All right. Now what you meant there was
2 that you had an interest in the northeast quarter of Section
3 33.

4 A That's right.

5 Q All right. Now, with regard to paragraph
6 three, you state the applicant has sought and obtained vol-
7 untary agreement for all other working interest owners in
8 the north half of Section 33, except Exxon Company, U.S.A.
9 What other working interest owners are there in the north
10 half of Section 33 other than Exxon?

11 A All right. In the northeast quarter of
12 Section 33, HNG Oil Company is owner of a leasehold interest
13 of 33.2986 percent. Tom Ingram of Roswell, owner of 33.3507
14 percent. Sol West the third, 25.3507 percent; and Michael
15 Shearn, 8 percent.

16 Q Now, I'd like to ask you with regard to
17 the Shoe Bar Ranch Unit, which is to the southeast, I believe,
18 of Section 33.

19 A Yes, this is right.

20 Q Who are the owners, who are the working
21 interest owners?

22 A The same parties that I just read out.

23 Q So the same parties have an interest in
24 the northeast quarter of Section 33 --

25 A This is right.

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1 Q -- and have identical interests in the
2 Shoe Bar Ranch Unit?

3 A That's right.

4 Q Now, with regard to the east half of Sec-
5 tion 33, in approximately March of 1979 do you recall HNG's
6 applying for a communitization agreement between HNG and
7 Sol West?

8 A I do, east half.

9 Q All right, and what was the purpose of
10 that communitization agreement?

11 A The purpose of the communitization agree-
12 ment was to get it in the hands of the State Land Office so
13 that the well, we were successful and the well was a producer,
14 we could communitize the two pieces, bearing in mind that
15 the southeast quarter is part of the Shoe Bar Unit, which
16 is past its primary term and is held by terms of the State
17 approved unit. We have met the plan of development require-
18 ments for the State.

19 Q All right. Now, I'd like to ask you a
20 question. Under the terms of the communitization agreement,
21 what does production on the northeast quarter of Section 33
22 accomplish insofar as the southeast quarter of Section 33
23 is concerned?

24 A Well, the communitization agreement has
25 accomplished nothing because the well was a dry hole.

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1 Q Okay. What then did the communitization
2 agreement propose to accomplish?

3 A It proposed, in the event of production of
4 gas from the Pennsylvanian formation, was to communitize the
5 lease on the northeast quarter with that on the southeast
6 quarter.

7 Q All right, and had there been production
8 achieved in the northeast quarter of Section 33, would you
9 agree with me then that the southeast quarter of Section 33
10 would have participated in that production?

11 A It would have.

12 Q And what effect would the production in
13 the northeast quarter of Section 33 had insofar as distribu-
14 tion to the co-owners, if I can use that term, of the Shoe
15 Bar Ranch Unit? In other words, had you achieved production
16 in the northeast quarter of Section 33, you stated that the
17 southeast quarter of Section 33 would have participated.

18 A That's right.

19 Q All right, now, would that participation
20 have extended as well to the other owners of the Shoe Bar
21 Ranch Unit?

22 A It would have.

23 Q All right, and HNG owns a 33 percent inter-
24 est in the -- approximately 33 percent interest, in the
25 Shoe Bar Unit?

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1 A. That's right.

2 MR. CARR: I'm going to object to this line
3 of questioning. It isn't relevant to anything in the case
4 before the Commission today. Participation in the Shoe Bar
5 Ranch Unit is not properly before this Commission.

6 MR. ATKINSON: Mr. Examiner, it may be
7 that this testimony may not be of help to the Commission
8 in making a determination of what is before the Commission
9 today; however, what I'm doing is laying a foundation for
10 what we will show in our case. Well, I won't go into what
11 it is we're going to show, but I'm just laying a foundation
12 for what we do hope to prove in our case as to HNG's interest
13 in the overall area.

14 MR. NUTTER: Well, I think, Mr. Atkinson,
15 that you're talking about a unit down here that did -- that
16 was communitized with a part of the acreage that was dedi-
17 cated but which is no longer dedicated to any well, and it
18 is a little far afield to get down here way into Section 3
19 when we're talking about a well in the north part of Section
20 33.

21 So I think the record shows already that
22 the Sol West interests, including Ingram, Shearn, and HNG,
23 have identical interests, apparently, in the northeast
24 quarter. Is that not correct?

25 A. That is correct, yes, sir.

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1 MR. NUTTER: According to your Exhibit
2 One these percentages are the same percentages that you gave
3 for the northeast quarter of Section 33.

4 A. That's right.

5 MR. NUTTER: I think the ownership has
6 been established. The ownership in the unit is the same as
7 the ownership in the northeast quarter.

8 MR. ATKINSON: Yes. That's precisely what
9 I was trying to establish.

10 MR. NUTTER: Okay.

11 Q. (Mr. Atkinson continuing.) I'd like to
12 ask you a question now, if I may, in regard to the HNG well
13 which exists immediately north of Section 33.

14 A. Yes, sir.

15 Q. Is that well completed?

16 A. That was our 28-1 located 1980 from the
17 east, 660 from the south of Section 28. It was under lease
18 to Getty Oil Company. The rights were acquired by HNG by
19 farm in. The well was drilled and it is a producer from the
20 Atoka.

21 Q. And what is the approximate production?
22 The producing rate, excuse me.

23 A. I'd say in the neighborhood of 5 million
24 a day.

25 Q. All right. And approximately how far north

1 of the north boundary of Section 33 is that located?

2 A. It's 660, 660 north of the north line of
3 33.

4 Q. Okay. Now, with regard to the well that
5 was drilled in the northeast quarter of Section 33, when was
6 that well commenced?

7 A. I'll refer this to Mr. Cherryhomes. He
8 has all the well data.

9 Q. Okay, you have no personal knowledge of
10 that, then?

11 A. This is a production department function,
12 not a land.

13 Q. Okay. You did testify on direct, though,
14 I believe, that it was a dry hole.

15 A. Yes.

16 Q. All right. You also testified, presumably
17 by your own personal knowledge, that in your opinion the
18 pooling of the northeast quarter northwest quarter of Section
19 33 would prevent waste and protect correlative rights. What
20 do you base that opinion on?

21 A. There again, I think I should refer this to
22 the production geologist, who will present testimony in that
23 connection.

24 Q. Okay, so you have no personal knowledge of
25 the facts which would lead to a conclusion that it will pre-

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1 vent waste and protect correlative rights.

2 A My personal knowledge is my observation of
3 what the production people have done. It's based on that
4 entirely.

5 Q Okay. You would agree with me that is be-
6 yond the area of your expertise.

7 A I would say that's probably true.

8 MR. ATKINSON: We have no further questions
9 at this time, Mr. Examiner.

10 MR. NUTTER: Are there any other questions
11 of the witness?

12 MR. CARR: I have no further questions of
13 this witness.

14 MR. NUTTER: He may be excused.

15 MR. CARR: At this time I would call Terry
16 Cherryhomes.

17
18 TERRY CHERRYHOMES

19 being called as a witness and having been duly sworn upon
20 his oath, testified as follows, to-wit:

21
22 DIRECT EXAMINATION

23 BY MR. CARR:

24 Q Will you state your name and place of resi-
25 dence?

1 A. Terry Cherryhomes. I live in Midland at
2 3502 Stanley.

3 Q. Mr. Cherryhomes, by whom are you employed
4 and in what capacity?

5 A. I'm employed by HNG Oil Company in Midland
6 as an exploitation geologist.

7 Q. Mr. Cherryhomes, have you previously testi-
8 fied before this Commission, had your credentials accepted
9 and made a matter of record?

10 A. No, I haven't.

11 Q. Would you briefly summarize for the Examiner
12 your educational background and your work experience?

13 A. Okay. I received a BS in geology from the
14 University of Oklahoma in 1955. I was employed by Humble
15 Oil and Refining Company, now Exxon. I have twenty-four years
16 experience doing exploitation and exploration geology in
17 south Louisiana, north Texas, west Texas, and New Mexico.

18 Q. Have you testified before other administr-
19 tive bodies?

20 A. Yes, sir, I was qualified and have testi-
21 fied in Austin, Texas.

22 Q. Are you familiar with the application of
23 HNG in this case?

24 A. Yes, sir.

25 MR. CARR: Are the witness' qualifications

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1 acceptable?

2 MR. NUTTER: Yes. Are you a consultant or
3 are you an employee of HNG?

4 A No, sir, I'm an employee of HNG.

5 MR. NUTTER: How long have you been with
6 HNG?

7 A I've been with HNG since November the 1st,
8 1977, two years.

9 MR. NUTTER: Uh-huh, and how long were you
10 with Humble?

11 A Twenty-two years and five months.

12 MR. NUTTER: Okay, thank you. He is
13 qualified.

14 Q Mr. Cherryhomes, have you prepared a study
15 of the area which is the subject of this case?

16 A Yes, sir.

17 Q Will you please refer to what has been
18 marked for identification as Exhibit Number Six and summarize
19 the data contained thereon?

20 A Okay. Exhibit Number Six is a gross Iso-
21 pach map of the Atoka Sand that produces in the wells that
22 are indicated by the red triangles. It shows the completions,
23 the Atoka completions, and the dry holes. It shows the gross
24 Atoka Sand found in each of the wells along this trend.

25 Q Does it also reflect Morrow completions?

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1 A. Yes, sir, it does.

2 Q. Would you describe the type of formation
3 you believe is encountered in the Atoka formation?

4 A. Okay. As shown on this Isopach, this sand
5 is interpreted to be a point bar stream channel sand. It is
6 trending roughly northwest/southeast.

7 Q. And what do you mean by a point bar deposit?

8 A. A point bar deposit is where the stream is
9 meandering and cutting out on one side of the stream and
10 depositing sand on the other side of the stream.

11 Q. And you anticipate encountering production
12 where the sands have been deposited --

13 A. Yes, sir.

14 Q. -- during that process.

15 A. That's correct.

16 Q. Now, based on your exhibit, where do you
17 believe the greatest chance of drilling a commercially suc-
18 cessful well would be in Section 33?

19 A. At the location proposed on this plat,
20 which would be 1980 from the west line and 660 from the
21 north line of Section 33.

22 Q. Do you believe that you have a better
23 chance of making a commercial well there than if you turned
24 the unit, having a stand-up unit and then drilling farther
25 to the south at a standard location?

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1 A. Yes, I do.

2 Q. Do you believe that the closer to the north
3 you get, the better the chance you have for a commercial
4 success?

5 A. Yes, I do.

6 Q. Then why can't you drill this well in the
7 northeast quarter of this section?

8 A. In the northeast quarter of Section 33?

9 Q. Yes, sir.

10 A. Based on the well control, the dry hole,
11 and the closeness to the producing well to the north, I be-
12 lieve it would be better to drill it as is shown on this plat.

13 Q. If you drill it as it is shown, are you
14 farther away from the well drilled immediately to the north
15 in Section 28 than you would be if you drilled in the north-
16 east quarter?

17 A. Yes.

18 Q. In your opinion would this result in more
19 effective drainage of the Atoka Sand?

20 A. Yes.

21 Q. Mr. Cherryhomes, in your opinion would two
22 producing wells in the north half of Section 33 be a prudent
23 way to produce this acreage?

24 A. No way.

25 Q. Do you believe the second well would be an

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1 unnecessary well?

2 A Yes, sir, I do.

3 Q In your opinion would this constitute econ-
4 omic waste?

5 A Yes.

6 Q What direction do you believe this formation
7 is trending?

8 A As shown on this Isopach, northwest/southeast
9 on the portion that's Isopached here.

10 Q And what do you base this on?

11 A I base this on the subsurface control that
12 we have with the twelve wellbores that are shown on this.

13 Q Now, if you drilled at an orthodox location
14 in the east half of this section, how far from the north line
15 would you have to drill?

16 A 1980 feet.

17 Q Do you believe you would get a commercial
18 well?

19 A No, I do not.

20 Q Do you believe if you drilled 1980 from
21 the north line in the northwest quarter you would obtain a
22 commercial well?

23 A No, I do not.

24 Q If you were to drill a well in the northeast
25 quarter, would it require an unorthodox location?

1 A. Yes.

2 Q. And even at an unorthodox location, you
3 don't believe this is the optimum location in the north half?

4 A. That's correct.

5 Q. What percent of the wells in this area,
6 the Atoka wells, have been commercial successes, approximately?

7 A. Approximately 50 percent.

8 Q. Do you consider drilling this well a high
9 risk venture?

10 A. I sure do.

11 Q. Are you prepared to make a recommendation
12 to the Examiner as to the risk factor that should be assessed
13 against those who do not participate in the drilling of the
14 well?

15 A. I would recommend a maximum risk of 200
16 percent.

17 Q. Do you believe that drilling a well as pro-
18 posed will enable you to protect your correlative rights in
19 the northeast quarter, as well as -- of this section?

20 A. Yes.

21 Q. Do you believe that drilling as you are
22 proposing would in any way impair the correlative rights of
23 any other operator in the area?

24 A. No, I do not.

25 Q. Now, do you believe the entire northwest

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1 quarter of Section 33 is productive of hydrocarbons in the
2 Atoka?

3 A. Not as the Isopach shows, I don't believe
4 that the entire northwest quarter will be productive.

5 Q. If a well was drilled at a standard loca-
6 tion on a unit comprising the west half of Section 33, do
7 you believe a commercial success would be obtained?

8 A. Not according to my interpretation, I do
9 not believe.

10 Q. And it is your opinion, I believe you
11 stated, that granting the application would prevent waste
12 and protect correlative rights?

13 A. That's correct.

14 Q. Was Exhibit Six prepared by you?

15 A. Yes, sir.

16 MR. CARR: At this time, Mr. Examiner, we
17 would offer into evidence HNG's Exhibit Six.

18 MR. NUTTER: HNG's Exhibit Six will be ad-
19 mitted in evidence.

20 MR. CARR: I have nothing further on direct.

21 MR. NUTTER: Any questions of the witness?

22 MR. ATKINSON: Yes, sir, we do have a few
23 questions.
24
25

CROSS EXAMINATION

BY MR. ATKINSON:

Q Yes, Mr. Cherryhomes, I'm just -- for my own personal information, what is an exploitation geologist?

A It's what we call a production geologist, as related to an exploration geologist. We do more field mapping and well site type geology, reservoir type mapping.

Q Okay, so it's sort of the next phase beyond exploration, I guess?

A No, sir, exploration would be doing regional type geology over a large area, whereas, we would be doing more detailed type work within a reservoir.

Q All right.

A Roughly.

Q Well, now, how much of the detailed work, as you call it, have you personally done out in this area, this Section 33, specifically? Have you done all this work yourself?

A I have done this work that's shown here.

Q All right. Now, let me ask you, when was this particular exhibit, or the exhibit from which it was derived, or the map from which the exhibit was derived, when was this drafted by you?

A In October, as is shown.

Q Okay.

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1 A. Or prior, shortly, you know, just before
2 it was made into an exhibit.

3 Q. All right. So the map that this was made
4 from was also made in October of 1979, is that correct, or
5 was it an earlier map?

6 A. The actual work was being done as we have
7 developed the field.

8 Q. Over what period of time would that be?

9 A. A year and a half, I would say.

10 Q. How much of that work has been done, would
11 you say, since March of 1979?

12 A. March of 1979?

13 Q. Yes, sir, it would be about six months or
14 so ago?

15 A. Probably, it's been in this form for prior
16 to that.

17 Q. Prior to March, 1979?

18 A. Yes. Of course, it's been revised as we've
19 drilled each well, which, as you can see on here, it's risky
20 and the data you receive may not be what you were expecting
21 when you drilled the well.

22 Q. How many wells have been -- have been
23 finished out here since March of 1979?

24 A. Let's see. Are you talking about having
25 been drilled out here?

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1 Q Yes, sir. I don't want to say completed
2 because I realize you all finished a dry hole out there, and
3 how many wells -- what I'm asking is how much additional
4 information have you all obtained throughout this area since
5 March of 1979? You told me it was -- that it depends on the
6 wells that have been drilled, and I'm curious how many wells
7 have been drilled to completion out here since March of '79.

8 A Well, the 33-1 was spudded in March and
9 abandoned in September.

10 Q Okay, that's your dry hole in the northeast
11 quarter of Section 33?

12 A That's correct, and then the well in the
13 northwest quarter of Section 34 was drilled after the well
14 in the northeast quarter of Section 33.

15 Q Okay. Northwest quarter of Section 34.

16 A The New Mexico State 34-1.

17 Q Okay.

18 MR. NUTTER: When was it completed?

19 A It was -- I don't have the completion date
20 at hand, but it was drilled after the abandonment of the 33
21 No. 1.

22 MR. NUTTER: Was it spudded after the aban-
23 donment?

24 A Yes, sir.

25 MR. NUTTER: And the 33-1 was abandoned in

1 September of '79?

2 A Yes, I believe I have -- the well, the 34-1
3 was spudded after the 33-1 reached a total depth, I should
4 say.

5 Q Okay.

6 A Sometimes the dry holes are not actually
7 abandoned, you know, immediately, or there may be other reasons.

8 Q Well, now, what kind of effect did the dry
9 hole in 33-1 and the completed well in 34-1, what kind of
10 effect did that have on your interpretation of this area?

11 A The, of course, we drilled the 33-1 between
12 the two producers that had already, you know, were known to
13 be producers, and the pay was expected to be greater, and
14 of course it was less, so it caused a slight revision in the
15 map.

16 Q What effect did that have on your estimated
17 reserves for the south half of Section 33?

18 A We have our reservoir engineer here that
19 we could direct that question to.

20 Q Is he going to be called as a witness?

21 MR. CARR: I'll call him.

22 A As you can see, based on my Isopach, I show
23 that at the present time the southeast quarter of Section 33
24 would be nonproductive.

25 Q Okay. Well, now, with regard to your Iso-

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1 pachs and without talking about actual reserve calculations,
2 what kind of effect did the drilling of the well in the north-
3 east quarter of Section 33 and the northwest quarter of Sec-
4 tion 34 have on your Isopach map in the south half of Section
5 33?

6 A. It actually had very little effect.

7 Q. Okay, so prior to drilling those wells, if
8 I understand you correctly, prior to the time that 33-1 was
9 spudded, you felt that the southeast quarter of Section 33
10 was essentially barren based on your Isopachs?

11 A. No, that is not correct. It has been revised
12 due to the data that we received on the 33-1.

13 Q. Okay.

14 A. Of course, the location of the well in
15 33-1 was located at the better location, as contrary to the -
16 to a location in the south half or the southeast quarter of
17 Section 33.

18 Q. Well, what I'm trying to get at is what
19 kind of revision of your Isopach map came about as a result
20 of the wells that were drilled in Section 33 and Section 34
21 since March of 1979.

22 A. I don't know for sure I understand what
23 you're saying.

24 Q. Okay. As I see this right now, just bearing
25 with me for my bad description here, the zero Isopach comes

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1 in roughly from the northwest and swings around where it's --
2 start up here in this corner. It comes in from the north-
3 west, heads sort of southeast, swings back to the east and
4 drops to the south and swings back around to the southeast
5 again, just roughly. Do you agree with that?

6 A. That's --

7 Q. Realizing that's not real accurate, but --

8 A. That's correct.

9 Q. Okay. What I'm interested in is what that
10 Isopach did prior to the time that you completed 33-1 and
11 34-1.

12 A. Okay. I do not have that map before me
13 here. It cut down on the pay that would have been shown in
14 at least a portion of the southeast quarter of Section 33.

15 Q. So the southeast quarter of Section 33,
16 then, prior to the drilling of these two wells, showed more
17 pay or less pay?

18 A. More pay.

19 Q. All right, and what effect did that have
20 on the southwest quarter?

21 A. It honestly had no effect on the southwest
22 quarter. As you can see, we had control on the wells in
23 Section 3 and in Section 34, and based on the rate of thick-
24 ness of the pay, as shown on this Isopach, and with the well
25 in Section 28 having been completed, the trend, as it's set

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1 up, would have shown more pay in the southeast quarter prior
2 to the drilling of Section 31 but not significantly more and
3 probably very little or none in the southwest quarter of
4 Section 33.

5 Q So I guess you'd agree with me, then, that
6 well control is crucial and is in fact determinative of where
7 your Isopachs actually lie, then, I guess, as far as your
8 plotting of Isopachs is concerned.

9 A Well, sure.

10 Q All right. Now, have you done any seismic
11 work out here that would allow you to have some other type of
12 control?

13 A We have seismic in this area.

14 Q Okay, is your interpretation -- is your
15 Isopach map, or any interpretation you have done of this area,
16 based on the results of seismic surveys?

17 A Yes, it's been used in the interpretation.

18 Q And you've relied on that information to
19 develop your interpretation of it?

20 A Partially. We use all the information that
21 we can, you know, gather.

22 Q Did you bring the information with you to-
23 day?

24 A No, sir.

25 Q Did you --

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1 A. I did not bring any information.

2 Q. Has it been brought today, to your knowledge?

3 A. Seismic information?

4 Q. Yes, sir.

5 A. No.

6 Q. Did you perform any structural mapping or
7 surface mapping surveys which would have aided in your inter-
8 pretation as well?

9 A. I have done no structural mapping on this
10 particular sand to speak of.

11 Q. All right. So then, correct me if I'm
12 wrong, we've established then, that in your interpretation
13 you have relied upon your well control and to a certain ex-
14 tent on your seismic information.

15 A. Yes.

16 Q. Okay. What else have you relied upon in
17 interpreting the reserves, et cetera, in this area?

18 A. Basically what I've described to you.

19 Q. Just those two things, then?

20 A. Basically, yes, the well control and the
21 seismic.

22 Q. Now, let me ask you a question, if I may,
23 about the well in the south half of Section 28. Mr. Parker
24 testified that is a producing well.

25 A. Yes, that's right.

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1 Q Around 5 million cubic feet per day, is
2 that correct?

3 A That's correct.

4 Q Would it be a source of concern to HNG if
5 another well were drilled near that north line of Section 33
6 upon which HNG was not the operator, in your opinion? As a
7 geologist?

8 A At what location?

9 Q Okay. You have a well in the south half
10 of Section 28 and in your opinion as the exploitation geolo-
11 gist for this area, would you be concerned if someone else
12 drilled a well near the north half of Section 33, someone
13 other than HNG, which was operated by someone other than HNG?

14 A No.

15 Q So HNG is not at all concerned about the
16 possibility of offset by somebody else, then?

17 A We -- we proposed the well to Exxon to
18 either join or farm out, and we would not have proposed it
19 had we been concerned about someone else drilling that well.

20 Q Yes, sir, what I'm trying to get at, as I
21 understand it, HNG is applying to be the operator in this
22 thing as well, is that correct?

23 A That's correct.

24 Q All right. If Exxon alone had desired to
25 drill on the northeast quarter or the northwest quarter with-

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1 out any joinder by HNG, would HNG have been concerned about
2 that, or would you have been concerned, as the exploitation
3 geologist?

4 A. Without any joinder, what do you mean?

5 Q. Well, excuse me. As I understand it, what
6 we're trying to do here, is HNG would like to pool the north
7 half of Section 33.

8 A. That's what is being proposed.

9 Q. Okay, and HNG would be the operator of the
10 well and the proceeds would apparently be split 50-50 between
11 HNG and Exxon under the proposal, is that your understanding?

12 A. Yes. HNG and our partners.

13 Q. Yes, sir, I'm sorry, HNG and associates
14 would get 50 percent and Exxon would get 50 percent.

15 A. Right.

16 Q. And my question to you is, if Exxon itself --
17 let's just take a hypothetical. Let's say that the west half
18 of Section 33 were being developed by Exxon.

19 A. Yes.

20 Q. And just say, as a hypothetical, that Exxon
21 alone wanted to put a well up in the northeast quarter of the
22 northwest quarter of Section 33 in an unorthodox location,
23 would that have bothered HNG at all as far as their -- as far
24 as their well in the south half of Section 28? Would that
25 have bothered you as exploitation geologist?

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1 A. If you set up your proration unit on the west
2 half of Section 33?

3 Q. Yes, sir, without any joinder by HNG or
4 participation in the well?

5 A. Your location would not be as it is shown
6 on this map here.

7 MR. NUTTER: He said it was a non-standard
8 location at that point.

9 A. It would -- I guess each well would be a
10 matter of concern.

11 Q. Okay, would this particular well, being
12 close to your well in the south section -- the south half of
13 Section 28, be of more concern than some other well might be?

14 A. I believe you're getting into the realm of
15 our reservoir engineers.

16 Q. Okay, so you're not qualified then to tes-
17 tify, you don't feel, about whether the location of a parti-
18 cular well is -- presents any -- has any particular type of
19 effect on the -- on the reservoir as a whole, is that what
20 you're saying?

21 A. Basically.

22 Q. Okay. Now, you testified earlier that you
23 felt that the location of a well on the northeast quarter
24 northwest quarter of Section 33, as proposed by HNG, is in
25 your opinion a good location for that well.

1 A. It's a better location -- I believe I was
2 asked in my opinion if it is a better location than a well
3 located in the northwest quarter of the northeast quarter of
4 Section 33, based on my opinion as to drainage, because it
5 would be farther distance from the well in Section 28 then.

6 Q. From the dry hole -- or from 28? I see.

7 A. Yes, sir.

8 Q. Okay. Would you explain to me just briefly
9 what a point bar stream channel sand is?

10 A. Yes, I could. Have you --

11 Q. I don't want you to teach me geology. I'm
12 just curious about what kind of --

13 A. Okay. Have you observed a present day
14 stream, say, as you're flying between here and any place,
15 Roswell or anywhere?

16 Q. Yes, sir, I sure have.

17 A. As they -- as they -- the stream is running
18 this way, in this direction, as they meander then they tend
19 to cut out on one edge of the stream and deposit that sand
20 within that meander in a different position, and as they
21 move around they -- they just cut out and then deposit sand.

22 Q. How does that differ with a braided stream
23 deposit?

24 A. A braided stream deposit?

25 Q. Yes, sir.

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1 A. Would more or less branch out into different
2 distributaries, you might say.

3 Q. So it wouldn't be along the main channel,
4 then, is that the idea?

5 A. It could be that way. I don't have a con-
6 trol here to determine that. I believe I said in my opinion
7 this is a point bar type of deposit.

8 Q. Now, with regard to the -- if we could take
9 Section 33 and sort of draw a diagonal line from the north-
10 west corner down to the southeast corner, making the two
11 triangles, with regard to the triangle that's down there
12 roughly in the southwest, say the southwestern triangle of
13 Section 33, see what I'm talking about there?

14 A. Uh-huh.

15 Q. Now, why don't you have more detail down
16 there? Why do you just have the zero and that's all?

17 A. There's no well control.

18 Q. And so what does that mean to you as the
19 exploitation geologist, as far as your ability to interpret
20 what happens down there?

21 A. It would be an interpretation. The further
22 you get away from the well control the more interpretation
23 you would apply.

24 Q. So it's a question of inference from --
25 from the well control you do have further to the northeast,

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1 then?

2 A. Yes, sir.

3 Q. And I think you'd agree with me that in any
4 given set of data points in a case like this, that there are
5 alternative interpretations which can be made by other geolo-
6 gists, and geologists' opinions will differ.

7 A. That's correct.

8 Q. Let me ask you a question, if I may, about
9 your dry hole, now, 33-1, is that what that's called?

10 A. That's correct.

11 Q. Okay. I believe you testified earlier that
12 that well was drilled to a depth of around 13,000 feet, or
13 13,300?

14 A. 13,000 feet, I believe, is correct.

15 Q. And did you intercept the Atoka?

16 A. Yes, we did.

17 Q. And how many feet is that?

18 A. As the exhibit shows, 3 feet.

19 Q. Okay. And you considered there to be 3
20 feet of pay thickness there in that hole? Would that be the
21 correct terminology?

22 A. Yes, that's correct.

23 Q. All right. Now, when you're talking about
24 pay thickness, or in this Isopach map generally, what kind
25 of porosity are you talking about?

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1 A. It varies.

2 Q. Okay. What do you consider the sort of
3 lower limit was an acceptable porosity?

4 A. The thickness of the sand is as important.
5 As you get thinner in this sand, probably the percent of por-
6 osity in it here, I would say.

7 I'm not -- I really -- I don't know what --
8 I don't have a figure in mind as to the lower cutoff on what
9 would be productive as porosity.

10 Q. All right. Well, if that's the case, then,
11 the Isopachs we're looking at here, that just means 3 feet
12 of Atoka Sand, and that's it.

13 A. It's a gross Isopach of the -- that's what
14 gross is.

15 Q. All right. So that that's without any
16 reference to whether that in fact has a sufficient porosity
17 to be a productive zone or how that compares with other zones
18 that are productive, as far as porosity is concerned.

19 A. Well, yes. As you could -- well, state
20 that again. I'm not sure I'm answering your question right.

21 Q. Okay, I didn't mean to confuse you and I'm
22 sure it's the nature of my question. I'll try it again.

23 What I'm asking you is this: Well, maybe
24 I'd better start this way. How do you identify the Atoka
25 Sands? How do you differentiate them from other --

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- 1 A. By log correlation.
- 2 Q. All right, and there's something, the unique
- 3 physical character about them that allows you to identify the
- 4 Atoka Sands, then.
- 5 A. They're correlative on the logs.
- 6 Q. Okay. Now what I'm asking you, is that the
- 7 thicknesses that are shown here demonstrate the thickness,
- 8 the entire thickness of the Atoka Sands in the wellbore.
- 9 A. That's correct.
- 10 Q. And without reference to any other para-
- 11 meters that might have effect on the productivity of that
- 12 zone.
- 13 A. We're, of course, more limited in a 3-foot
- 14 sand on the amount of effective porosity you could have than
- 15 in a wellbore that has more.
- 16 Q. Well, did you consider porosity at all, is
- 17 what I'm trying to ask you?
- 18 A. Yes, we did.
- 19 Q. Okay. To what extent did you consider
- 20 porosity?
- 21 A. We set pipe and tested this sand.
- 22 Q. You came up with porosity readings, then,
- 23 on it?
- 24 A. Yes.
- 25 Q. All right. And you said that you consider

1 those in determining this Isopach. What I'm asking you is
2 was there a lower limit that you used as being an unacceptably
3 low porosity?

4 MR. NUTTER: I'm not sure if you two guys
5 are talking about the same thing.

6 MR. ATKINSON: Maybe we're not.

7 MR. NUTTER: I think you're talking about
8 net porosity, or net Atoka Sands, and I believe this map here
9 is on gross.

10 MR. ATKINSON: All right. Well, that's what
11 I was trying to bring out.

12 MR. NUTTER: Mr. Cherryhomes?

13 A. Yes, sir.

14 MR. NUTTER: I think what he's driving at
15 is your exhibit here states that this is gross Atoka Sand.

16 A. Yes, sir.

17 MR. NUTTER: Now, in computing gross Atoka
18 Sand, say 25 feet in one well here, are you considering poro-
19 sity in that or just gross Atoka Sand?

20 A. This is gross Atoka Sand.

21 MR. NUTTER: Okay, so porosity has no
22 bearing, or the quality of the pay in that Atoka Sand has
23 no bearing in arriving at a gross figure, does it?

24 A. No, sir.

25 MR. NUTTER: Okay.

1 A. It doesn't. I'm sorry, I wasn't for sure
2 what you were, you know, leading to.

3 MR. ATKINSON: Well, no, it was my fault.
4 Well, I wasn't sure either, so --

5 Q. (Mr. Atkinson continuing.) Now, you stated
6 that you had about 3 feet of gross Atoka Sand in your dry
7 hole at 33-1?

8 A. Yes, sir. Now, this is the same sand that
9 is producing in these wells with the red triangles.

10 Q. Okay. As far as -- well, okay. So the
11 zero line that you have drawn in there near your 3-foot
12 thickness maybe isn't quite accurate as to being one-third
13 of the way between the zero and the 10-foot line, I guess.
14 There's a little bit of --

15 A. There's a little -- I know what you're
16 driving at there.

17 Q. Okay, so once again, it really is a question
18 of interpretation, I suppose?

19 A. That's correct.

20 Q. And you actually have nothing to the -- if
21 you take a straight line and match up your well in the south
22 half of Section 28 with your 33-1, with the well in the north
23 half of Section 3, those three form a pretty straight line
24 right there.

25 A. Yes, they do.

1 Q And you just look down the northwest there,
2 and you have no control to the south -- I'm sorry, southwest,
3 you have no control to the southwest, which in fact shows that
4 you have a zero contour line down there.

5 A That's -- until you move down in Section 11.

6 Q Okay, that's down about maybe another mile
7 and a half or two miles below your -- or to the southeast of
8 your Section 3 well, your 3-1.

9 A It's a mile from there.

10 Q Okay. All right, but that is away from the
11 vicinity of Section 33.

12 A Yes.

13 Q Okay. So that is your only control point
14 for determining that your zero contour line even exists at
15 all to the southwest of that line we talked about a moment
16 ago.

17 A That's correct. There's no well control.

18 Q Was there anything on your seismic data,
19 even though you do not have it with you, was there anything
20 on your seismic data that led you to believe that was a zero
21 contour line?

22 A The points that are on this exhibit influence
23 the interpretation that's shown on this exhibit.

24 Q Okay. What I'm asking you is that earlier
25 we talked about the fact that your seismic information did

1 have a bearing on your -- on how you interpreted this area,
2 I believe.

3 A. That's correct. In interpreting a point
4 bar type sand, this is the interpretation that I came up
5 with based on the well control as shown on this map.

6 Q. Okay, and your seismic data.

7 A. That's correct.

8 Q. All right. Now, all I'm trying to ask you
9 about is this: We established, I think you will agree with
10 me, that you have no well control to the southwest of the
11 line that we're talking about, which would establish the ex-
12 istence of a zero contour, and that is inferential only,
13 based on your -- on the control you do have to the northeast.

14 A. That is my interpretation.

15 Q. Yes, sir, now I understand that.

16 A. Okay.

17 Q. Now what I'm asking you is whether you have
18 any other information, such as seismic data, that would indi-
19 cate the existence of something that would correlate with the
20 zero contour line to the southeast, the southwest of the line
21 we were talking about?

22 A. No. This -- I know what you're talking --

23 Q. Okay.

24 A. This -- I know what you're talking about.

25 This is interpretive.

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1 Q Yes, sir.

2 A We didn't expect this well in 33-1 to have
3 only 3 feet of Atoka Sand when we drilled it.

4 Q Oh, I'm sure that's understood. That's
5 right.

6 A And we are 2500 feet from the well in Sec-
7 tion 28. We go from 3 feet to 31 feet.

8 Q Uh-huh.

9 A The well up in the northwest quarter of
10 Section 21, you have two wells there 1320 feet apart, zero
11 feet to 20 feet. This is highly erratic development and
12 it's highly interpretive development, geologically, on the
13 map, anyway.

14 Q And actually, I guess, referring to that
15 Section 21, maybe that's what you were talking about, you've
16 got a -- is this an Amoco well up there in the northwest
17 quarter of Section 21?

18 A That's correct.

19 Q You've got -- what would you say the dis-
20 tance is between the dry hole, which is pretty much in the
21 middle of Section 21 --

22 A It's roughly 1320 feet, I believe.

23 Q Okay, that's what you were talking about
24 a moment ago, then.

25 A Yes.

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1 Q Okay. So in fact, it would seem that it's --
2 because this area is kind of interpreted, I guess, it's dif-
3 ficult to use a broad brush to interpret what's going to hap-
4 pen. Would you agree with that?

5 A Are you trying to say that there can be
6 other geologic interpretations of this area?

7 Q Well, what I'm trying to get at is that --
8 would you agree with me that it is difficult to interpret
9 what will happen at a distance from a well control area?

10 A Sure.

11 Q Okay, and that is evidenced by other dry
12 holes and producing wells that are in a reasonable proximity
13 to one another within this same zone.

14 A That establishes the risk that we see in
15 this area of drilling wells.

16 Q All right. Now, in your testimony earlier,
17 I just want to clarify something, you testified that you felt
18 that the proposed HNG plan would prevent the drilling of un-
19 necessary wells, I believe.

20 A Yes, I believe that was asked.

21 Q Okay. Do you agree with that, though, that
22 the proposed HNG plan is going to prevent the drilling of
23 unnecessary wells?

24 A I -- I'm not for sure what you're getting
25 at.

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1 Q Well, no, I'm asking, Mr. Carr asked you
2 whether in your opinion the proposed well in the northwest
3 quarter of -- I'm sorry, the northeast quarter of the north-
4 west quarter of Section 32 and the pooling of the northeast
5 and northwest quarters of -- did I say 32, I meant 33 -- and
6 the pooling of the north half of Section 33, would result
7 in the -- or would prevent the drilling of unnecessary wells
8 in this section.

9 A Based on my interpretation here, yes.

10 Q Okay. Now, if your interpretation -- if
11 there were information available, or if your interpretation
12 happened to be incorrect, and if it in fact were shown that
13 the west half of Section 33 had a substantial pay zone, as
14 a hypothetical, that would no longer be true, then, would it,
15 that it would prevent the unnecessary drilling -- the drilling
16 of unnecessary wells?

17 A I'm not -- I don't understand your question.

18 Q Okay. We have assumed -- you assumed that
19 in making your statement that it would prevent the drilling
20 of unnecessary wells --

21 A This location that I'm showing on the map?

22 Q Yes, sir.

23 A Yes.

24 Q You have assumed that there would be a well
25 as indicated on the map and that the north half of Section 33

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1 would be pooled. My question to you is this: If you change
2 your basic assumptions, if the geologic interpretation were
3 different, as a hypothetical, if it could be shown that the
4 west half of Section 33, the entire west half, had a substan-
5 tial pay zone, then your statement would no longer be correct.

6 A. I prefer to stick with the data I have
7 here and my interpretation of this area.

8 Q. Yes, sir, well, I understand your preference
9 for going with your own interpretation. I'm asking you as a
10 hypothetical, in your opinion as an expert exploitation geo-
11 logist, if the west half of Section 33 demonstrated substan-
12 tial pay zone throughout the entire west half --

13 A. There's no data at this time that indicates
14 that and I'm not going to step out on a limb and make a pre-
15 diction on it.

16 Q. No, sir, I wouldn't ask you to make a pre-
17 diction. I'm asking you, as a hypothetical question, if that
18 were shown, without regard to anything that you have before
19 you, asking in your expert opinion, if that were shown, then
20 your statement that the enactment of the -- that the pooling
21 of the north half of Section 33 would prevent the drilling
22 of unnecessary wells would no longer be correct, would you
23 agree with me on that?

24 A. You're still hypothetical there. I have
25 nothing to indicate that there's any pay in the southwest

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1 quarter of 33.

2 Q Well, I don't want to get into an argument
3 with you because you know a lot more about it than I do.
4 I'm just asking as a hypothetical question, you've admitted
5 that the area is subject to alternative interpretations.

6 A I'm not -- I don't feel that I should an-
7 swer that. I don't know that there's any pay in the southwest
8 quarter, based on my well control that this map was contoured
9 on. My map shows a zero foot line. Even if you didn't put
10 the zero foot line, you have control from 3 feet on up to 10
11 and 20, and this is my interpretation.

12 Q Yes, sir, I understand it's your interpre-
13 tation. Are you saying that there is no other way that that
14 can be interpreted?

15 A No.

16 Q Okay. If there is an alternative inter-
17 pretation, based on the data points that you have before you,
18 and if that alternative interpretation showed a pay zone in
19 the west half of Section 33 --

20 A We don't have a well in the west half of
21 33.

22 Q Yes, sir, I realize that. I'm asking you
23 if we had an alternative interpretation which showed a pay
24 zone in the west half of Section 33, would it still be true
25 that to pool the north half would prevent the drilling of

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1 unnecessary wells? In your expert opinion.

2 A. A proration unit formed with the south half
3 of Section 33 would solve that.

4 Q. Well, I'm asking a hypothetical question.
5 Will you answer it, please?

6 A. You're asking something that I have no data
7 on.

8 Q. Okay, let me ask you this: If it were
9 shown as a matter of interpretation that the west half of
10 Section 33 had a substantial pay zone throughout the entire
11 west half of Section 33, would your statement that the pooling
12 of Section -- of the north half of Section 33 will protect
13 correlative rights, would that still be true, in your opinion?

14 A. It will based on the data that we have
15 right now.

16 Q. So you're not willing to accept any other
17 interpretation, then?

18 A. There can be other interpretations. I made
19 this interpretation on facts. That's my interpretation.

20 Q. I understand that.

21 MR. NUTTER: I don't believe he's going to
22 buy your hypothetical situation, Mr. Atkinson.

23 MR. ATKINSON: I get that idea.

24 MR. NUTTER: Maybe after you show this pay
25 over here you can call him back on then and ask him about it.

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1 MR. ATKINSON: Well, I think I'm going to
2 have to move along. I think you're right about that. I
3 tried, at least.

4 Q Oh, I know one thing I wanted to ask you.
5 Now, by the Atoka, when you're talking about the gross Atoka
6 Sand, approximately where does the Atoka lie with respect to
7 the Morrow?

8 A It's above the Morrow.

9 Q Okay. Would you say immediately above the
10 Morrow?

11 A The Atoka section varies in thickness. The
12 base of the Atoka becomes the top of the Morrow.

13 Q Okay.

14 A Based on our nomenclature.

15 Q All right, that's fine.

16 I guess there's one last point I'd like to
17 ask you about, which is really a reiteration of what we've
18 already talked about.

19 If you just draw a line between the well
20 in the south half of Section 28 and the northeast quarter of
21 Section 33, just draw a line and just look immediately to
22 the west of there over at the northwest quarter of Section
23 33, what do you have over there that indicates that you've
24 got a zero foot, a 10-foot, and a 20-foot Isopach running
25 through that northwest quarter?

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1 A. You have the well in Section 28 that has
2 31 feet of gross Atoka Sand. You have the well in the south-
3 east of the northeast of Section 33 that has 3 feet.

4 Q. Okay.

5 A. That's what establishes your Isopach inter-
6 val.

7 Q. All right. As to the particular contour
8 configuration, however, to the west of there, there is no
9 additional well control. That's all I'm asking.

10 A. You --

11 Q. Is there -- is there any further well con-
12 trol to the west of a line between the well drilled in the
13 south half of Section 28 and the northeast quarter of Section
14 33?

15 A. To the southwest of there?

16 Q. To the west.

17 A. This is interpretive.

18 Q. Okay.

19 A. I might point out that out of ten wellbores
20 here, or twelve wellbores that are indicated by the exhibit,
21 that ten were noncommercial in the Morrow.

22 Q. So the Atoka is the only productive zone
23 then, I guess.

24 A. Yes.

25 MR. ATKINSON: We have no further questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Cherryhomes, I would like to ask you the sequence of the drilling of these wells in here and also the productivity of the producers, or the initial tests on them.

Which was the discovery well for the Atoka reservoir here?

A The well in Section 3, the 3-1.

Q And when was this drilled?

A The first production was in September of 1978.

Q And I see a line --

A I'm sorry. The Shoe Bar 34-1 was drilled. It was the discovery well.

Q 34-1?

A The one in the south half of Section 34.

Q And when was it drilled?

A It, let's see, it potentialed in September of 1978.

Q Okay, and then after it the 3-1 was drilled?

A Yes.

Q And when was it completed?

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1 A. I don't have that data right -- okay, let
2 me explain this. The well, the 3-1 was completed in the
3 Morrow and it produced a small amount and then worked over to
4 the Atoka.

5 The well in 34 had the first production out
6 of the Atoka, so it would be the Atoka discovery.

7 Q. Okay. And how good of a well is it in the
8 Atoka?

9 A. The 34-1 or the 3-1?

10 Q. Yes, sir, the 34-1?

11 A. It's 2 million a day, roughly, now.

12 Q. How about the 3-1? It was originally com-
13 pleted in the Morrow and then plugged back to the Atoka.

14 A. Yes, sir, it produced about 45 days and I
15 don't even have a cumulative production on that in the Morrow.
16 It was worked over to the Atoka.

17 Q. How good of a well is it in the Atoka, then?

18 A. It's 4 million a day.

19 Q. And then what was the next well drilled?

20 A. The third well drilled was the well in
21 Section 28.

22 Q. And it makes about 5 million a day?

23 A. 4-1/2 to 5 million a day, yes, sir.

24 Q. And then you drilled the 33-1.

25 A. Yes, sir.

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1 Q And after you got to TD on it, you spudded
2 the 4-1.

3 A The New Mexico State 34-1, which is in the
4 north half.

5 Q The 34-1, I understand, and how good of a
6 well is it with its 4 feet of pay?

7 A That well has 14 feet, if you will look at
8 that --

9 Q Oh, okay, well I was reading that as a 4
10 then.

11 A I can see. The 1 is lined up with the
12 little dashed line there. That's 14 feet. It's 2 million a
13 day.

14 Q Now, the Morrow in the 3-1 has a green line
15 through it, indicating it's been abandoned, I guess.

16 A Yes, sir.

17 Q And the one up in the northeast northeast
18 of 34 also has a green line through it.

19 A Yes, sir, that was an old well that was
20 abandoned in 1965 in the Morrow.

21 Q Okay, I believe that's all. Thank you.

22 MR. NUTTER: Are there any other questions,
23 of Mr. Cherryhomes?

24 MR. ATKINSON: We'd like to reserve the right
25 to recall Mr. Cherryhomes.

1 MR. CARR: And I would like to ask him a
2 couple questions.

3
4 REDIRECT EXAMINATION

5 BY MR. CARR:

6 Q Mr. Cherryhomes, I gather from your testi-
7 mony that you believe your interpretation of the Atoka forma-
8 tion is correct.

9 A Yes, sir.

10 Q Now, suppose that, as Mr. Atkinson suggested,
11 that a well was drilled at an unorthodox location on a unit
12 comprising the west half of Section 33, the location, in
13 fact, which we're discussing here today. What effect would
14 this have on the reserves that exist in the northeast quarter
15 of the Section 33?

16 A It would drain it.

17 Q How could you protect yourself from drain-
18 age?

19 A We could not do it, based on my interpre-
20 tation.

21 Q Would drilling an additional well there
22 protect you from drainage?

23 A No, sir.

24 Q If you drilled an additional well in the
25 northeast quarter, could you protect yourself from drainage

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1 from the well in the northwest quarter?

2 A. At an orthodox location?

3 Q. At an unorthodox location offsetting it?

4 A. You would have two wells too close together.

5 Q. Do you believe that one of those wells

6 would be an unnecessary well?

7 A. Yes, sir, I do.

8 Q. Do you believe this is a prudent way to

9 develop this acreage?

10 A. The way that we have --

11 Q. With two wells?

12 A. No, I do not.

13 MR. CARR: I have nothing further.

14 MR. NUTTER: If there is nothing further,

15 the witness may be excused.

16 Did you have another witness, Mr. Carr?

17 MR. CARR: I believe that Mr. Atkinson is

18 interested in having me call -- I'd like to call Don Hunter

19 simply to answer a couple of questions and then I believe he

20 can answer the questions proposed by Mr. Atkinson.

21 MR. NUTTER: Okay, would you call him?

22 MR. CARR: Mr. Hunter has not been sworn.

23
24 (Witness sworn.)
25

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DON HUNTER

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of residence?

A Don Hunter. I reside at No. 11 Linda Court in Midland.

Q Mr. Hunter, by whom are you employed and in what capacity?

A HNG Oil Company's employee in the capacity of Manager of Reservoir Engineering.

Q Have you previously testified before this Commission?

A No, I have not.

Q Would you summarize for the Examiner your educational background and your work experience?

A I received a Bachelor of Science degree in petroleum engineering from Texas Tech University in 1962 and I've worked throughout the Mid-Continent areas for major oil companies and independents, a consulting firm, and am presently employed with HNG. I was initially employed by

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1 Amoco, then Skelly, General Crude, and was with
2 and Aycock Engineering Consulting Firm for approximately three
3 years before joining HNG in March of '78.

4 Q Are you familiar with the area which is the
5 subject matter of this case?

6 A Yes, I am.

7 MR. CARR: Is the witness considered qual-
8 ified?

9 MR. NUTTER: Yes, he is.

10 Q Mr. Hunter, I believe you heard the testi-
11 mony a few moments ago and the questions by Mr. Atkinson con-
12 cerning the reserves that you anticipate now exist under the
13 south half of Section 33. Could you give us some data as to
14 what reserves you now believe exist in that area?

15 A In the south half of Section 3 I cannot
16 assign any reserves to -- to that particular portion of Sec-
17 tion 33.

18 Q These are Atoka reserves.

19 A Atoke reserves, yes.

20 Q Does that apply to both the southwest and
21 the southeast quarters?

22 A Yes, it does.

23 Q Have your figures been revised as more data
24 becomes available as you develop the pool?

25 A Yes, they have.

1 MR. CARR: I have nothing further on direct
2 from Mr. Hunter. I believe that covers what you were re-
3 questing.
4

5 CROSS EXAMINATION

6 BY MR. ATKINSON:

7 Q Mr. Hunter, you say that you presently have
8 calculated there to be no reserves in the Atoka in the south
9 half of Section 33.

10 A That is correct, yes.

11 Q All right. To what extent has that re-
12 serve estimate changed since March of 1979?

13 A That's been revised downward. We now -- I
14 now believe that essentially no undrained reserves in the
15 south half of Section 33. Existing three wells in that por-
16 tion of the reservoir should drain that particular reservoir
17 as is now mapped.

18 Q Existing three wells being which wells?

19 A The Shoe Bar 3-1, Shoe Bar 34-1, and New
20 Mexico State 34-1.

21 Q So your position is that any reserves that
22 existed beneath Section 33 have been drained by those three
23 wells?

24 A If there -- if there is any significant
25 reserves, yes. I do not assign any significant reserves to

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1 the south half of Section 33.

2 Q Okay. Now is that on the basis of drainage
3 from the three wells you just spoke about or is that on the
4 basis of the fact that Mr. Cherryhomes interpretation shows
5 that there are no Atoka Sands in the south half of Section 33?

6 A That was based on the performance of the
7 three wells that we've just mentioned in addition to the dry
8 hole drilled in Section -- north half of Section 33, the 33
9 No. 1.

10 Q So you don't consider the presence of the
11 gross Atoka Sands to be the determinate factor in determining
12 what reserves are then.

13 A No, I do not.

14 Q All right. What do you look at to determine
15 what reserves are?

16 A The permeability of the gas being one factor.
17 The gross pay, as we -- have it mapped, is not a net
18 pay number, and the -- this figure must be revised downward
19 based on porosity and saturation cutoffs as are developed with
20 development of the field.

21 Q Okay. So the reserve calculations that you
22 do have are gross pay, then, are gross reserves.

23 A As is shown on this map, yes, those are
24 gross. Right.

25 Q All right. Now what have you calculated

1 for the north half of Section 33 as to estimated reserves?

2 A. At this time, if a well were drilled within
3 say six months, I could assign 2.8 Bcf.

4 Q. That's total?

5 A. Total recoverable reserves from a well
6 drilled in the north half of Section 33, yes.

7 Q. All right, will you please tell me how that
8 is distributed between the northeast quarter and northwest
9 quarter of Section 33?

10 A. Okay, the predominant portion of these re-
11 serves would be in the -- in this reservoir it is now mapped
12 in section 28 and 31. The predominant portion of those re-
13 maining reserves to date lie in the south half of Section
14 28.

15 Q. All right. Now, as between the northeast
16 quarter and the northwest quarter of Section 33, how do you
17 allocate 2.8 Bcf recoverable reserves?

18 A. Essentially equally.

19 Q. Okay, what do you mean by essentially
20 equally?

21 A. One well drilled in the northwest portion
22 of Section 33 should, at the location specified, should drain
23 the north half of Section 33.

24 Q. All right. I'll ask you --

25 A. It's a more advantageous location based on

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1 the gross pay data that we now have, as well as what informa-
2 tion has been developed from drilling the 28 No. 1.

3 Q All right. Now, you stated earlier that
4 you estimate 2.8 Bcf of recoverable reserves in the north
5 half of Section 33.

6 A Yes.

7 Q And you are aware that the northeast
8 quarter presently is leased by HNG and the northwest quarter
9 is part of the lands leased by Exxon. That is, they're not
10 under the same ownership right now.

11 A Correct.

12 Q All right. What I'm asking you is what
13 you calculate to be the reserves in the northeast quarter of
14 Section 33.

15 A I would say probably one-third of this
16 2.8 Bcf, possibly.

17 Q So we're talking approximately, then, about
18 .93 Bcf? That's just off the top of my head.

19 A I'm speaking now based on standard loca-
20 tions.

21 Q All right. Well, Well, just so we can get
22 clear where we are now, the 2.8 Bcf you're talking about are
23 estimated recoverable reserves in the entire north half of
24 Section 33, alone.

25 A Yes.

Q Without reference to Section 28 or any other sections or wells in the area. All right.

Now, --

A Now that is not irrespective of Section -- the well in Section 28. I'm speaking of reserves that are presently in place at this present time. If the well were to be drilled in the north half of Section -- in the northwest quarter of Section 33, within six months there would be 2.8 Bcf remaining; however, this number would be revised downward with prolonged wait prior to spudding of a well and completion of an Atoka well in the north half of Section 33.

Q Now why is that?

A Because of the Well No. 28 is currently producing at the rate of 4-1/2 million a day. The longer that a location is deferred, the more likelihood would be drainage of the north half of Section 33.

Q All right. Now, correct me if I'm not saying this properly, but the present recoverable reserves in place in the north half of Section 33, according to your calculations, is approximately 2.8 Bcf.

A Yes.

Q All right. Now, according to your calculations what are the present recoverable reserves in place in the northeast quarter of Section 33?

A Approximately one-third of that if a well

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1 were to be drilled 1980 from the north line in that northeast
2 quarter of Section 33.

3 Q Now what effect does when the well is
4 drilled have on it?

5 A It has a great effect.

6 Q All right, because of drainage from the
7 28-1?

8 A Yes.

9 Q All right. So what we're talking about,
10 then, is that assuming that the well would be drilled when
11 did you say, in January of 1980?

12 A Immediately. I'd say completed by January,
13 1980, yes.

14 Q Completed by January, 1980, within the
15 next two months?

16 A Yes, that's -- the earlier the better, in
17 my opinion.

18 Q Okay. So we're talking about, then, I can
19 do this mathematically but you probably do it a lot better,
20 how many Bcf do you estimate presently in place in the north-
21 east quarter of Section 33 then? One-third of 28.1?

22 A Oh, I'd say about 900 million.

23 Q Okay. All right, and the remaining 1.8 --
24 1.9 million would be in the northwest quarter.

25 A 1.9 billion.

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1 Q Billion, I'm sorry, would be in the north-
2 west quarter, is that correct?

3 A At this time, yes.

4 Q You may not be the proper person to ask
5 this, but let me ask you specifically what the HNG's plans
6 are for drilling a well as far as timing is concerned.

7 A I'm not qualified to answer that; however,
8 I would definitely make the recommendation that a well be
9 spudded as soon as possible.

10 I am in a position to make that recommenda-
11 tion.

12 Q I just want to switch back to one point I
13 actually talked to you about earlier, I think. With regard
14 to the south half, the southeast quarter in particular, what
15 change do you have in your estimated reserves in place be-
16 tween March of '79 and the present? You said now you esti-
17 mated essentially zero. What did you estimate back in, say,
18 March of 1979 on that?

19 A I had indicated -- I did not segment that
20 out from that Section 33; however, the reservoir being
21 drained by the three wells in Sections 34 and 3, I had attri-
22 buted approximately 3 to 5 Bcf higher reserves than I now
23 can assign. The dry hole in the northeast quarter of Section
24 33, in my opinion, altered the drainable area within that
25 reservoir.

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1 Q Within that section?

2 A Within that -- no, within the particular
3 reservoir itself.

4 Q All right. How much of that 3 to 5 Bcf
5 do you think would have been -- in your opinion would have
6 been allocated to Section 33? What kind of a change did
7 that result in for Section 33, if you can do that?

8 A Oh, possibly -- possibly 1 Bcf, as much as
9 that, maybe.

10 Q All right. I do have just one more ques-
11 tion for you, Mr. Hunter. These calculations are essentially
12 volumetric in nature, your reserve calculations?

13 A They were initially volumetric and they
14 have been revised downward somewhat by BHP/Z analysis,
15 material balance through pressure, pressure work.

16 MR. ATKINSON: Thank you. We have no fur-
17 ther questions.

18
19 CROSS EXAMINATION

20 BY MR. NUTTER:

21 Q Mr. Hunter, in response to Mr. Atkinson's
22 question there you stated that you estimated there were 2.8
23 billion cubic feet of recoverable reserves in the north half
24 of Section 33. You also stated if the well were drilled
25 within the next six months.

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1 A. Yes, sir.

2 Q. You also stated that one third of those
3 reserves, or .9 of a billion, would come from the northeast
4 quarter of Section 33 if the well were drilled within the
5 next two months.

6 A. Yes, sir.

7 Q. Then in response to his further questioning
8 you said that the balance, the 1.9 billion cubic feet would
9 come from the northwest quarter. Would that mean that the
10 well drilled at your proposed location here would drain 1.9
11 billion from the northwest quarter or would part of that
12 drainage also come from Section 28 to the north?

13 A. There's a possibility part of that would
14 come from Section 28 to the north, yes. The well in Section
15 28 has exhibited very high deliverability, very high pay
16 quality, so that it would be hard to say that with certainty
17 but certainly some of the gas could come from Section 28.

18 Q. But would the majority of that 1.9 billion
19 come from the northwest quarter of Section 33?

20 A. Yes, sir, in my opinion it would.

21 Q. Okay, thank you.

22 MR. NUTTER: Are there any further questions
23 of the witness?

24 MR. CARR: I have no further questions of
25 this witness. I would like to recall Mr. Parker to ask him

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1 one question. We have some data that came out of cross ex-
2 amination that was not available to Mr. Parker on direct.

3 MR. NUTTER: Mr. Hunter is excused.

4
5 RAYMOND PARKER

6 being recalled as a witness and being still under oath,
7 testified as follows, to-wit:

8
9 DIRECT EXAMINATION

10 BY MR. CARR:

11 Q Mr. Parker, how soon is HNG prepared to
12 drill a well at the proposed location?

13 A We presently have Rig 38 Parker Drilling
14 that we have in a sense loaned out to another party for a
15 well that will take approximately 50 to 60 days, maybe 65
16 days to complete. The rig comes back to us and it will be
17 available for this project subject to operating agreements
18 being executed and the necessary papers.

19 Q It is fair to say that you will be prepared
20 to drill within 80 days, you anticipate that?

21 A I think we can say within 80 days we will
22 be prepared to drill a well.

23 MR. CARR: That's all I have of Mr. Parker.

24 MR. ATKINSON: I just want to clarify that.
25

RECROSS EXAMINATION

BY MR. ATKINSON:

Q So what you're saying is that at the outside you would be -- you would actually commence drilling this is the middle of November, so you're talking about -- December, January, somewhere around the first part of February, the middle of February?

A I'd say by the middle of February.

Q All right, and how long would you anticipate for completion?

A About -- not over 50 days, 55 days.

Q Okay, so you're planning on finishing the well by April sometime?

A Yes. I think it would be before that, I'm confident. I might add that rig availability is critical. I mean it's just almost impossible to get a good rig.

MR. NUTTER: Are there any further questions of the witness? He may be excused.

Did you have anything further on direct, Mr. Carr?

At this time we'll take a fifteen minute recess.

(Thereupon a recess was taken.)

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1 MR. NUTTER: The hearing will come to
2 order, please.

3 Please continue, Mr. Atkinson.
4

5 GENE AYDINIAN
6 being called as a witness and having been duly sworn upon his
7 oath, testified as follows, to-wit:
8

9 DIRECT EXAMINATION

10 BY MR. ATKINSON:

11 Q Will you please state your name and occu-
12 pation?

13 A My name is Gene Aydinian, and I'm the Dis-
14 trict Geologist of the Andrews District, Exxon Company, U.S.A.

15 MR. NUTTER: Spell your name, please.

16 A A-Y-D-I-N-I-A-N.

17 MR. NUTTER: And Gene is G-E-N-E.

18 A G-E-N-E, right.

19 Q And where do you reside?

20 A I live in Andrews, 1401 Northwest 9th Street.

21 Q And have you previously testified before
22 the Commission?

23 A No, I haven't.

24 Q And you've not had your qualifications ac-
25 cepted as a matter of record?

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- 1 A. No, they weren't.
- 2 Q. Where were you educated and what was your
- 3 education?
- 4 A. I've got a Bachelor's of Science degree at
- 5 the University of Notre Dame and a Master of Science degree
- 6 in geochemistry at California Institute of Technology.
- 7 Q. And who are you employed by?
- 8 A. Exxon Company, U.S.A.
- 9 Q. You said earlier that you're a district
- 10 geologist for Andrews District?
- 11 A. That's correct.
- 12 Q. And what area does the Andrews District
- 13 encompass?
- 14 A. Andrews District encompasses the north
- 15 part of the Permian Basin, Andrews County, Texas, Gaines
- 16 County, Texas, also south New Mexico, and Arizona, various
- 17 other places.
- 18 Q. And what do your duties consist of as Dis-
- 19 trict Geologist for Exxon?
- 20 A. I supervise four geologists who also work
- 21 for Exxon; have various responsibilities in the district.
- 22 Q. And the geologists who you supervise, are
- 23 they familiar and do they work within the general area that
- 24 is the subject of the dispute today?
- 25 A. Certain of the geologists do; not all of

1 them do. Some geologists have responsibility for some of our
2 Texas fields; two geologists that I have are responsible for
3 New Mexico properties.

4 Q And are you yourself personally familiar
5 with the Section 33, Township 16 South, Range 35 East area?

6 A Yes.

7 Q And have you personally examined information
8 relating to the area subject of the dispute?

9 A Yes, I have.

10 MR. ATKINSON: Are the witness' qualifica-
11 tions acceptable?

12 MR. NUTTER: Yes, they are.

13 Q Mr. Aydinian, I hand you what has been
14 marked for identification as Exxon Exhibit Number One. Would
15 you please identify that?

16 A Exhibit Number One shows the area of the
17 Shoe Bar Ranch South, showing the production in the area with
18 the yellow -- I should say triangles, indicating Atoka pro-
19 duction; yellow triangles indicating wells which are currently
20 producing from the Atoka; hexagons indicating Morrow production;
21 triangles in hexagons, triangle enclosed in the hexagon indi-
22 cates both Atoka and Morrow production were approved, though
23 at the present time I'm not aware of any dual completions, so
24 only one of those sands would be producing; finally, the green
25 circles indicate dry holes, holes which were dry in both the

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1 Atoka and the Morrow.

2 Q Now with particular regard to the Section
3 33, what does that depict as to ownership?

4 A Okay. In Section 33 the western half is
5 colored yellow. This is the Exxon acreage, which is 320
6 acres; the eastern half is colored orange, representing the
7 communitization of HNG's northeastern quarter and also Sol
8 West's southwest quarter.

9 Q Southeast quarter, is that?

10 A I'm sorry, southeast quarter, right.

11 Q All right. Now, the Exxon acreage, to your
12 knowledge is that held under a single lease?

13 A Yes, it is.

14 Q And who is the lessor? Is it a State of
15 New Mexico lease?

16 A It's a State of New Mexico lease, that's
17 right.

18 Q Okay. Now, with regard to the box or the
19 rectangle with the dashed lines which encompasses the south-
20 east quarter of Section 33, could you explain what that is?

21 A That is the Shoe Bar Ranch Unit which was
22 formed with partners HNG, Sol West, Tom Ingram, and various
23 others.

24 Q All right, now you -- excuse me.

25 A Various other people.

1 Q All right, now you have examined what I
2 believe was HNG Exhibit One as to the ownership and relative
3 position of the tracts and such. Would you say that they
4 substantially agree as to what they present?

5 A Yes, I would.

6 Q Now, you talk about the Atoka and the Morrow.
7 For purposes of identifying nomenclature I refer to what has
8 been marked for identification as Exxon Exhibit Two. Would
9 you explain what that is and what it relates to?

10 A Exhibit Two is a type log; just to establish
11 time it's a type log of the HNG Shoe Bar Ranch Unit 3 No. 1
12 Well. It is a gamma ray dual lateral log showing the top
13 of the Atoka at approximately 11,700 feet. I'm sorry,
14 11,970 -- I've got this wrong here. Okay, let me try one
15 more time, 12,080 feet, that's the top of the Atoka, which
16 is marked; also the top of the Morrow is shown at 12,520 feet.
17 What I will talk about is the Atoka pay in which some of the
18 following maps will show, is shown there highlighted in red
19 with the perforations in this particular well also shown, and
20 some wells in the area which have Morrow production, the Mor-
21 row pay at about 12,840 feet, shows the relative position of,
22 actual position of the Morrow pay in some of these wells did
23 differ.

24 Primarily, I will be talking about Atoka
25 from here on out, though.

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1 Q All right. Now, you heard Mr. Cherryhomes
2 testimony that the Atoka that generally exists above the top
3 of the Morrow. Would you agree with that statement?

4 A Yes, I would. In fact, if you will look
5 at it, the top of the Atoka pay that we talk about here is
6 roughly about 70 or 80 feet above the top of the Morrow.

7 Q Well now, when you talk about the Atoka
8 pay, what do you consider to be the pay zone?

9 A The pay zone is the sand unit there which
10 I think you can identify by the gamma ray curve which moves
11 out to the left and then comes back between the interval on
12 this log of 12,460 feet to 12,480 feet. An Atoka pay zone
13 would also have to have the characteristics of greater than
14 6 percent porosity. This is a minimum cutoff which I use.

15 Q Is it fair to say, then, that we're talking
16 about a net Atoka zone versus a gross Atoka Sand?

17 A Yes, I would.

18 Q All right. Now, I refer you to what has
19 been marked for identification as Exxon Exhibit Three. Will
20 you please explain what that is?

21 A This is a structure map on the top of the
22 Morrow; scale is 1-to-4000 feet. It shows the same production
23 symbols as was shown on the previous map, Atoka being shown
24 by triangles; dry holes by circles; Morrow pay by hexagons.
25 The contour interval is 50 feet. Basically what I'm depicting

1 here is a northeast/southwest trending anticline in the area
2 around Section 33, with the crest of the anticline being
3 approximately 8430 feet subsea.

4 Well control is shown highlighted in yellow.

5 Q All right. Now, you say this is a structural
6 map. Could you explain what this depicts? You said it was
7 a northwest/southeast trending anticline. Could you explain
8 how that relates to what we're doing here today?

9 A Well, at the present time with the limited
10 amount of wells that have been drilled in the area, I cannot
11 really say that our production in the area is controlled
12 either by structure or by stratigraphy or by a combination of
13 both. So I've made the structural map, keeping in mind that
14 this might be at some future time one of the determinative
15 factors in the reservoir, reservoiring of the gas in this
16 area.

17 Q Is it your opinion that structure may have
18 some type of correlation to the availability of hydrocarbons?

19 A It may. It may not, but it may, and I don't
20 think we can rule out that structure might not be a factor
21 here.

22 Q Would it be fair to say, then, that this
23 is just one of the factors you consider in determining what
24 is a favorable location, for example, for a well?

25 A Yes.

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Q All right. Now, what information did you use to derive this structural map?

A. Primarily well control and the well control is shown on the maps here. I have logs for all these and we correlated them and came up with the top. Also limited seismic was used in the area to determine the structure.

Q Okay. Was the seismic a determining factor in what you did here?

A. Yeah, well, the seismic gave me the general trend of the anticline; at least confirmed generally the anticlinal picture that we're showing here, versus another picture might -- would be like a uniform -- uniformly dipping horizon from the southwest to the northeast. That would be an alternative, and the seismic seemed to rule that out.

Q Now I'll ask you with regard to the structural map, would you agree with me that this is interpretive?

A. Yes, I would. I think it is interpretive at least -- well, I should say I think it's well controlled in the northeast flank and the southwest flank of the anticline. I would say interpretive on the western flank here, though you can see that there is some sort of a change in a uniform contour. If we were to look at the southwest flank HNG Shoe Bar Ranch Unit 3 No. 1 Well, which had a top of the

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1 Morrow at 8530 subsea and the Stanoline Well, which had a
2 top at 8601 subsea, you can see that definitely we are
3 getting higher on structure as we move to the northwest,
4 and I think that confirms the fact that those contours do
5 turn in that area from a northwest/southeast trend to a
6 northeast/southwest trend, and I have taken the liberty of
7 turning them a little further and closing off to form an
8 anticline. But I will agree, it is interpretive, in that
9 western part of the area.

10 Q Now I refer you to what has been marked
11 for identification as Exxon Exhibit Number Four and could you
12 please tell the Examiner what that is?

13 A This is a Atoka net pay map. Again, the
14 same scale, 1-to-4000 feet. The contour intervals here are
15 10 feet apart. What it shows basically here is a northeast
16 I'm sorry, a northwest/southeast trending pay zone with the
17 thin being zero to 10 feet contours running in the particular
18 section of interest, Section 33, in the northwest quarter
19 and in the southeast part of the northeast quarter. It
20 thickens on both sides from 10 to 30 feet to the northeast
21 and also from 10 to 30 feet to the southwest. Well control
22 is shown highlighted in yellow adjacent to the wells.

23 Q All right. Now you have examined the HNG
24 exhibit which is entitled gross Atoka Sand, I believe, have
25 you not?

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1 A. Right, I have.

2 Q. Now, are there -- is there well control,
3 or are there additional wells that HNG has used that do not
4 appear on your map?

5 A. There are two points on the map which are
6 significant, I think, to the problem. At least not signifi-
7 cant but are in the problem that I don't have. One is the
8 sidetrack hole that Amoco drilled from their No. 1 HC Well
9 in Section 21, which they had two feet of net; the other
10 well is the Dorchester 28 Com Well in the northeast quarter
11 of Section 28. At the time we did not have any information
12 on either of these wells at all, so they were not incorpor-
13 ated into the -- into the map as such.

14 Q. Well now, realizing that you haven't had
15 time to sit down and thoroughly contour this, what kind of
16 effect do you think this additional information would have
17 on your interpretation here?

18 A. I don't really think it would have much
19 of an effect at all. Certainly not the Amoco Well. I think
20 that's actually almost taken care of in this interpretation.

21 Q. The Amoco well is the one in the south
22 portion of Section 28?

23 A. Right, the sidetrack hole from the No. 1
24 HC. I don't think that would significantly impact this in-
25 terpretation. The Dorchester well would tend to swing the

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1 contours a little bit more to the northeast and would pull
2 that 10-foot contour down to the southwest, but I don't think
3 it would really change the trend of what we're showing here,
4 which is a thickening to the northeast with a thinning run-
5 ning across the northern part of Section 33.

6 Q Okay. Is it fair to say, then, that you
7 would sort of jog the Isopachs in the vicinity of the Section
8 28 wells slightly to the west, then? Is that what you're
9 talking about, or slightly to the east?

10 A Well, let me see. I'm not sure what you
11 mean by jog. What I would do here is I have a nose mapped
12 in Section 28 in the eastern half 30-foot thick, so to speak,
13 and I would tend to make that tighter. In other words pull
14 the northern limb of that nose, the contour which runs into
15 the northeast quarter of Section 28, I would tend to pull
16 that closer in to the HNG Well drilled in Section 28 in the
17 south half, and thus pull those other contours north of it
18 down across that well that Dorchester drilled.

19 Q Would this in any way materially change
20 the interpretation, the Isopachs in the vicinity of Section
21 33?

22 A No, I don't think it would change this
23 interpretation. I wouldn't have any problem with that at
24 all; not basically, it wouldn't really change it at all.

25 Q All right. Now, just to clarify what we're

1 talking about here, you have Isopachs that are entitled or
2 at least marked 10, 20, and 30. What does that mean?

3 A. Okay, 10 indicates that there was 10 feet
4 of net Atoka pay in this area, net Atoka pay being again in-
5 terpreted as porosity greater than 6 percent and capable of
6 being a reservoir rock.

7 20 feet is 20 feet of reservoir pay and
8 30 feet is 30 feet of reservoir pay.

9 Q. All right.

10 A. So if we were to drill a well right on the
11 20-foot contour, we should get 20 feet of pay right at that
12 point.

13 Q. Now, I notice in the -- roughly the north --
14 the southeast quarter of the northeast quarter where the dry
15 hole which HNG has testified to was drilled, that seems to
16 be the center of your smaller magnitude Isopach there.

17 A. That's correct.

18 Q. All right. Do you have any particular
19 geological theory or depositional theory as to what would
20 account for that little island there?

21 A. Well, the model I use here for the Atoka
22 Sand deposition is that of a braided stream rather than a
23 point bar. The difference between a braided stream is, as I
24 would interpret it, would be that a braided stream tends to
25 deposit sand in a sheet, generally a very wide sheet, so that

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1 you would get a lot of lateral sand deposition. There would
2 be isolated islands of shale or non-reservoir quality sand-
3 stone in the braided stream model, but I think that that would
4 probably be a little bit closer interpretation than a point
5 bar. A point bar would tend to deposit isolated pods of sand.
6 Again, you have a meandering river, every once in awhile a
7 meander will cut itself off and you have left there a sand
8 body which is completely surrounded by shale, isolated, of
9 limited extent; whereas, a braided stream, and this is typi-
10 cal of what you would see in the west, for instance, rivers
11 like the Platte, even there's a small one on the way down to
12 Albuquerque from here, tends to deposit sand in more of a
13 sheet fashion.

14 And I think that's -- that's the model I
15 used here in developing this picture.

16 Q All right. Now, once again I want to ask
17 you about the structural map, which I believe is our Exhibit
18 Number Three. What do you perceive to be the relationship
19 between your structural interpretation and your net pay in-
20 terpretation?

21 A There may be a relationship between them.
22 It is admittedly interpretive, but it is conceivable that at
23 the time of deposition of the sand, that the anticlinal
24 feature may have been present in some form, at least a hint
25 of it might have been there, so that the sand would tend to

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1 be deposited on the flanks of the structure and not on the
2 crest of the structure as much. Of course, many things can
3 happen here, and I think probably there might have been some
4 rotation of that structure later on so that the relationship
5 is not as clear now, but given the limited amount of data
6 here, we're interpretive, there may be a relationship to it.

7 Q All right. Now, I'll ask you this: To
8 what extent is the Exxon Exhibit Number Four, the net pay
9 map, interpretive?

10 A I would say that it is interpretive in
11 the south part of Section 33 because there, like has been
12 already brought out, there is no well control in the area,
13 in the south part of 33, or for that matter, anywhere to the
14 west of the section in question, with one exception. There
15 are three wells that were drilled down to the -- and it's
16 shown on the lower righthand corner of this particular plat.

17 Q Is that the lower lefthand corner?

18 A Did I say -- yeah, lower lefthand corner.
19 The one -- two wells have interpreted Atoka pay. One would
20 be the Marathon well which was drilled in the northeast
21 quarter of Section 7. They have interpreted 58 feet of net
22 Atoka pay and it is indeed producing from the Atoka at this
23 time. Also the Mobil well drilled in the southwest quarter
24 of Section 8, which has an interpreted 12 feet of pay. I
25 used that to influence my interpretation somewhat in that

1 there is no termination of the sand to the southwest of the
2 dry hole. Instead, in fact, I've interpreted there being
3 sand present in the south half of Section 33.

4 It is interpretive, but that is the point
5 here, with the limited well control we have, there are many
6 different interpretations which can be made.

7 Q Now, referring to your net pay Isopach here
8 in Exhibit Four, do you have an opinion as to whether the
9 total volume of gas as depicted by the net pay area in the
10 northwest quarter, is greater or less than that in the north-
11 east quarter, realizing this is a qualitative opinion?

12 A I'd say that the northwest quarter has more
13 gas reserve than the northeast quarter.

14 Q And why is that?

15 A I think it has a thicker pay section in
16 the northwest quarter, say a greater amount of thicker pay
17 section in the northwest quarter than in the northeast quar-
18 ter.

19 Q All right. And do you have an opinion on
20 the hypothetical situation where the north half of Section
21 33 would be pooled, a well drilled at the proposed HNG loca-
22 tion, and the hydrocarbons therefrom split on a 50-50 basis
23 between HNG and associates and Exxon, do you have an opinion
24 as to whether that would be an equitable division of the
25 available hydrocarbons in view of your Isopach study?

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1 A. I think it would be an inequitable distri-
2 bution. I think since the northwest quarter, that is, the
3 Exxon acreage has more reserves, I think that Exxon would not
4 be receiving its fair share of reserves, based on a north
5 half unit, proration unit.

6 Q. Now what plans, or I should say what recom-
7 mendations have you made to Exxon for the development of the
8 west half of Section 33?

9 A. We've recommended drilling a well in the
10 first quarter of 1980. We have a tentative location 1980
11 feet from the north line and 660 feet from the west line of
12 Section 33.

13 Q. Would that put that roughly, then, in the
14 southwest quarter of the northwest quarter?

15 A. That's correct.

16 Q. Now you say that you have recommended that.
17 What action has Exxon management taken?

18 A. We presented the recommendation to Exxon
19 management and we have approval and money budgetted to drill
20 a well, tentatively scheduled for the first quarter of 1980.
21 And we're committed to drill that well.

22 Q. By tentative, then, how uncertain is it or
23 how certain is it that you will drill?

24 A. It's very certain that we're going to
25 drill it.

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1 Q And what would you estimate to be the com-
2 pletion time?

3 A Depending on rig availability when we spud
4 the well, if we spud in the first quarter of 1980 the latest
5 it would probably be completed would be about May.

6 Q May of 1980?

7 A That's assuming that we spud a well in, you
8 know, the latter part of the first quarter.

9 Q All right.

10 A It probably will be sooner than that.

11 Q So that would be about six months from now,
12 then?

13 A That is correct.

14 Q All right. Referring to the gross Atoka
15 Sand map, you mentioned earlier that -- this is HNG's map --
16 we mentioned earlier that there are two data points, two
17 well control points that are here on their map that did not
18 appear on ours. Can you tell me whether the wells in the
19 southwest -- southwesternmost area of your map appear in the
20 HNG map?

21 A No, they don't.

22 Q Do you have an opinion as to whether a
23 well located in the southwest quarter of the northwest quarter
24 of Section 33, the proposed location, whether that would ef-
25 fectively tap and recover the available gas lying beneath

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1 the west half of Section 33?

2 A. I think that would be the best location for
3 drilling a well in the western half of Section 33 to recover
4 the reserves. That's why we chose it.

5 Q. Do you have an alternative point which you
6 would choose?

7 A. We could drill a well in the southwest
8 quarter 1980 feet from the south line and 660 feet from the
9 west line, but I don't think that is preferable to the loca-
10 tion that we have chosen.

11 Q. What makes the southwest quarter northwest
12 quarter the most desireable point? In your opinion?

13 A. Well, in my opinion, I think first of all,
14 it's high on structure as we have it interpreted. It's as
15 high on structure as you can get, and also it has not given
16 away any pay section. We'd be looking at probably about 23
17 feet of pay. Like I said before, I don't think that we can
18 make a judgment right now as to what is the controlling
19 factor, structure or stratigraphy. For this reason, there-
20 fore, we want to make sure that, you know, we try to maximize
21 our chances of getting a producing well; therefore, you want
22 to get as high on structure without giving away pay section,
23 and vice versa, you don't want to get down too far dip to
24 maximize pay, but we feel that this is the best compromise
25 position that we have.

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1 Q Now, Exxon management, you stated earlier,
2 has approved and has budgetted funds for the drilling of
3 this well.

4 A That's right.

5 Q Now, did they base their decision on the
6 information that is before the Commission today insofar as
7 the Isopachs and the structural maps are concerned?

8 A That's right. They based their decision
9 on these maps.

10 Q All right.

11 MR. NUTTER: During this lull, Mr. Aydinian,
12 the well that Exxon has budgetted I presume would go to the
13 Morrow, also, would it not?

14 A Yes, it would. We definitely want to test
15 the Morrow. I talked about the Atoka because the Atoka is
16 the main pay here, but of course, there have been three wells
17 that have had Atoka production and even though we don't see
18 it, I should say, there's potential there. We can't map it
19 in the area. We definitely want to go down and see it. We
20 would be drilling at about 13,100 feet, which I believe would
21 get us through the entire Morrow section.

22 MR. NUTTER: Mr. Carr, could you tell me
23 if the well that HNG is proposing is proposed to go to the
24 Morrow, also?

25 MR. CARR: Yes, it is.

1 MR. NUTTER: Thank you.

2 Q Just a couple of more questions. In the
3 event that the north half of Section 33 were poor, leaving
4 Exxon with the southwest quarter of Section 33, what kind of
5 limitations or restrictions would that impose on Exxon, in
6 your opinion, as to development of that southwest quarter?

7 A Well, we would be left with just a quarter
8 of the section and for us to drill a well we would have to
9 form -- we would have to approach Sol West, the leaseholder
10 of the southeast quarter of the section, and make an offer
11 to either farm out the acreage from him or to join with him
12 in a joint interest well. If we wouldn't get permission like
13 that, we would have to go through a forced pooling procedure
14 similar to what we have here. These are several red tape
15 type of hurdles. Also, I'm not sure that given that, we
16 would have the same recommendation for management to drill.
17 We've got approval to drill in the western half 100 percent
18 interest well. We'd have to go back to management again and
19 get approval to go through with all the procedures, the pro-
20 ceedings of getting the farm out or the working interest
21 ownership. We'd just have to re-evaluate it, and I don't
22 think that the locations down there are as favorable as the
23 location that we have picked here, mainly because it's closer
24 to that dry hole that HNG has drilled, recognizing that it
25 does pose some risk to the drilling in that area.

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1 Q In the event that the north half of Section
2 33 were pooled, would you as the supervising geologist recom-
3 mend to management that a well be drilled in the southwest
4 quarter?

5 A I think what I would have to do is probably
6 wait to see what the results of the HNG location would be
7 before we would go ahead and recommend the location. I
8 think we would want to see the results of that well. And to
9 see if it would confirm the picture that we have here. I
10 think if we had the picture, if it did confirm the picture
11 that we have here, or did not disprove the picture which
12 I've interpreted here, I would probably go ahead and recom-
13 mend that we approach Sol West, the leaseholder of the south-
14 east quarter.

15 Q In your opinion that would require addi-
16 tional pooling and such.

17 A Yes, it would.

18 MR. ATKINSON: We have no further questions
19 at this time.

20 MR. NUTTER: Are there any questions of the
21 witness? Mr. Carr?

22

23

CROSS EXAMINATION

24

BY MR. CARR:

25

Q Mr. Aydinian, I would like to direct your

1 attention to Exhibit Number One.

2 A. Yes.

3 Q. The yellow acreage in Section 33 represents
4 the Exxon lease, is that correct?

5 A. That's correct.

6 Q. How long has Exxon had this property under
7 lease?

8 A. I think, let me see. The next witness can
9 answer that better. I think it might be from the 1920's.

10 Q. It's been a substantial period of time.

11 A. It has been a substantial period of time,
12 yes.

13 Q. And is this held by production?

14 A. Yes, it is.

15 Q. Do you know where the producing well is
16 that's holding this lease?

17 A. The producing wells, I believe, are north
18 of the plat here in the Townsend Unit. Townsend Field.

19 Q. Now I believe you testified that you re-
20 commended to your management that a well be drilled in the
21 southwest quarter of the northwest quarter of Section 33.

22 A. That's correct.

23 Q. When was this recommendation made?

24 A. We made the recommendation -- well, we
25 first approached our management in August that we would be

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1 interested in a well here and we had final approval in the
2 second week of October.

3 Q Was this before or after you were contacted
4 by HNG?

5 A This was after we were contacted by HNG
6 that we got the final approval, to drill our well.

7 Q I believe you stated you were prepared to
8 drill in the first quarter of 1980.

9 A That's right.

10 Q When do you believe you will spud this
11 well?

12 A I would, let's see, I would think we'd
13 probably spud the well either in the month of January or
14 the first part of February. It depends on rig availability
15 and, you know, it's the same problem everybody has.

16 Q And you will be filing a C-101 with the
17 Commission requesting permission to drill sometime --

18 A I assume that's a permit to drill? Yes,
19 we will.

20 Q And you will dedicate the west half of the
21 section to that well?

22 A Yes, we would.

23 Q I'd like to now move to your Exhibit Number
24 Three and just be sure I understand your testimony on that.
25 You used seismic data to determine the basic trend of the

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1 formation was, is that correct?

2 A. That's correct.

3 Q. And based on seismic alone you certainly
4 wouldn't be recommending that a well be drilled.

5 A. Well, no, I wouldn't be. I think well con-
6 trol is the primary factor here that we're using.

7 Q. And as it now stands on the southwest of
8 the dry hole that was drilled by HNG in 33, there really has
9 been no development and everything there is interpretive.

10 A. To the southwest of HNG's --

11 Q. Dry hole.

12 A. Okay. I would think that your well control
13 in the southeast quarter of Section 33, based on the HNG
14 Section 33 No. 1 Well and the Shoe Bar Ranch well drilled in
15 the south half of Section 34. Now, when we go west of there,
16 I would say that that is interpretive, with the exception
17 that the seismic line that we had across here indicated that
18 it was an anticlinal type of feature, but it is interpretive.

19 Q. Now you indicate that to the southwest --
20 or I think now we can move to Exhibit Number Four, actually,
21 which I think is the basis of the testimony.

22 If we go -- move on this plat southwest
23 from the dry hole in Section 33, what do you base your deter-
24 mination on that you're encountering this thickness? Isn't
25 this all interpretive as you move from 10 to 20 feet to 30

1 feet?

2 A I think it's an interpretation based on
3 the analysis from the data that I have.

4 Q What data?

5 A The well control data which is shown on
6 the map.

7 Q Okay, so the well control data actually to
8 the north -- well, to the -- to the east of the dry hole and
9 to the north of the dry hole is what you're using to base
10 your interpretation to the south and west of the dry hole.

11 A Also the two data points down to the south-
12 west of the dry hole.

13 Q Do you generally base your conclusions on
14 data on wells that are this far distant from the subject
15 area?

16 A It all depends on what I'm looking at
17 here. This particular case, and I think everybody will recog-
18 nize that it is an interpretation, I think that given a choice
19 between drawing a zero contour, let's say in the position
20 where I have my 20-foot contour, and which is similar to the
21 HNG interpretation, and given the alternate interpretation
22 which I have of putting sand there, I would think that I
23 would have to give the nod to this interpretation here, be-
24 cause there is indications of sand to the southwest.

25 Q When were the wells down in the southwest

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1 drilled in Sections 7 and 8?

2 A. I believe -- I don't have the exact dates.
3 They were several years -- 1970's, I think, the early part
4 of the 70's. They're about five years old.

5 Q. Do you have any data on those wells that
6 would suggest that any well should have been drilled to the
7 north and east of those?

8 A. I've got to wonder why nobody has drilled
9 to the north and east of them. We have data to indicate that
10 they are very good wells.

11 Q. But that for some reason no one has in-
12 ferred from those production --

13 MR. ATKINSON: I'm going to object. I
14 think that he's testified that he doesn't have any idea of
15 why people haven't, and unless Mr. Carr can demonstrate
16 there is some hookup with Exxon, some great reason why Exxon
17 has not drilled in that area, then I don't think it's very
18 relevant.

19 MR. CARR: I believe he's testified some
20 of his inferences are based on two Atoka wells on the south-
21 west corner of this plat, and I think that based on that,
22 we're certainly entitled to cross examine him on what -- why
23 there has been no development in that area if these wells are
24 so good that you can infer from them.

25 MR. NUTTER: Well, I -- as far as my own

1 interpretation of the data so far, I'm not going to pay any
2 attention to those wells down there in the southwest, because
3 you've got a 58-foot and a 12-foot less than a mile apart
4 and I don't think they have any bearing on this structure up
5 here.

6 MR. CARR: Thank you, Mr. Nutter.

7 Q I believe on your plat, and correct me if
8 this is wrong, on your plat there is a well in Section 28 in
9 the northeast quarter in the Edison Lease, I believe you
10 said there were 6 feet of net pay in that well.

11 A I didn't state that. I think your map
12 shows that there is 6 feet but we do not have a log and I
13 have not personally examined the well, and I don't really
14 know what is in that.

15 Q Would that 6 feet support your conclusion?

16 A I wouldn't say that it supported my conclu-
17 sion, either. I'd have to take a look at it before I could
18 make that inference.

19 Q Didn't you in fact indicate that there were
20 28 feet of pay in that well?

21 A No, I didn't. That's deception, if I'm not
22 mistaken.

23 Q All right. All right.

24 A 28. Oh, I think I see what you're saying.

25 Q Based on your contour lines.

1 A. Okay, now before -- I had not gotten the
2 information. Not knowing the information I would have in-
3 ferred that that would have had about 28 or 29 feet of net
4 pay in it; however, given the fact that there is an indication
5 that it might be less than that, the contours could be altered
6 to accommodate that data and I do not think seriously impair
7 this particular interpretation.

8 Q. Now you're interpreting what we have here
9 as a braided stream.

10 A. That's correct.

11 Q. If you're dealing with a braided stream
12 would you be more likely to anticipate wells being drilled
13 along the stream bed and having commercial producers following
14 a trend than you would if you were dealing with a bar point
15 type formation?

16 A. Well now what do you mean by a trend?
17 Would you explain that?

18 Q. Well, let me ask you this: Does a braided
19 stream sort of a deposit, a braided stream, does that tend
20 to result in isolated pods of sand, as you have indicated
21 you believe a point bar deposit --

22 A. I would say no.

23 Q. Isn't it possible from just where we have
24 producing wells in this area that we have an isolated pod
25 of sand in Section 34 and 3; that you have another one in

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1 the south half of 28, the north half of 33, and perhaps
2 another in 21? Isn't that a possible interpretation of those?

3 A. It's as possible as having a shale -- a deposit
4 of shale, too.

5 Q. Mr. Aydenian, if a well was drilled in the
6 west half of this section dedicated to it -- let me strike
7 that. In your opinion are there any reserves under the north-
8 east quarter of Section 33?

9 A. The northeast quarter of Section 33? Yes,
10 I'd say there were.

11 Q. If a well was drilled in the west half of
12 Section 33 and the west half was dedicated to it, do you be-
13 lieve it would drain the northeast quarter of that section?

14 A. Of Section 33?

15 Q. Yes.

16 A. Depending on how extensive the reservoir
17 was in there, I would say that it would.

18 Q. Do you know of any way for HNG to produce
19 those reserves other than drilling another well in that
20 quarter section?

21 A. They could possibly produce the reserves
22 from the well in the south half of Section 28.

23 Q. Would they -- but would the interest owners
24 because of their interest ownership in the northeast quarter
25 of Section 33 derive any benefit from those?

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1 A No, I would say they wouldn't because you
2 have different interest owners in the northeast quarter than
3 you have in -- northeast quarter of Section 3 than you have
4 in Section 28.

5 Q Do you believe that it would be prudent to
6 drill another well in the northeast quarter of Section 33?

7 A My recommendation, if I were working for
8 HNG, which I am not, my recommendation would be that I would
9 look at, if I had my interpretation here and I were recom-
10 mending it to HNG management, I would recommend the drilling
11 of another well in the western half of Section 33. I would
12 drill it either in the northeast quarter, let's say the
13 northwest quarter of the northeast quarter, or probably more
14 preferable, I would drill it in the southeast quarter of
15 Section 33.

16 Q You would recommend drilling a well in the
17 southeast quarter?

18 A Of Section 33, that's correct.

19 Q Now if you drilled a well offsetting in
20 the northeast quarter of Section 33, wouldn't you be drilling
21 in close proximity to the well in the south half of 28?
22 Of necessity?

23 A You would want to drill this again where?
24 What part of the northeast quarter?

25 Q I believe you suggested you would recommend

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1 drilling in the, and correct me if this is wrong, in the
2 northwest of the northeast. Did you say that?

3 A. Yeah, I probably --- I would, that's what
4 I said and that's where I'd recommend drilling.

5 Q. Would you derive as effective a drainage
6 pattern from a well located there as from the proposed loca-
7 tion?

8 A. I think that you would probably get as much
9 interference from that well across the lease line in Section
10 28 in that northwest quarter of the northeast quarter of
11 Section 33 as you would from the well which you have proposed
12 in the northeast quarter of the northwest quarter of Section
13 33.

14 Q. So you believe, in fact, the well in Sec-
15 tion 28 is draining the acreage in the northeast quarter of
16 the northwest quarter, is that correct?

17 A. I don't believe that it is. I don't know
18 if it is. I believe that it could be draining the acreage
19 in the north half of Section 33, and I think the engineer
20 testified to that fact, too.

21 Q. Then conversely, a well drilled at the
22 proposed location would drain acreage in Section 28, is that
23 not correct?

24 A. I think that's possible.

25 Q. So part of the production in that well would

1 in fact come from Section 28.

2 A I think it's possible. I don't know that
3 it would. There are a lot of things that we just don't know.

4 Q All right. I believe you said your recom-
5 mendation to management was to drill -- maybe you'd better
6 tell me where you recommended that the well be drilled in the
7 west half.

8 A Okay, we recommended and we have tenta-
9 tive approval to drill -- I shouldn't say tentative. We
10 have recommended a tentative location and have approval to
11 drill 1980 feet from the north line and 660 feet from the
12 west line.

13 Q And you felt there you were high on the
14 structure and you also what, there were two reasons.

15 A Okay. Well, let me put it this way, I
16 think will be explain it. You can be high on the structure
17 and have a minimum of net pay or you can be all the way down
18 on the flanks of the structure and have a maximum net pay.
19 What I try to do is optimize that to be as high on the struc-
20 ture as possible without adversely giving away an adverse
21 amount of net pay section, because it appears that the net
22 pay might have an influence on the rate of production. So
23 this particular location, I think is the best location in the
24 fact that it would optimize the position on structure and at
25 the same time give you a respectable amount of net pay.

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1 Q Wouldn't you be able to drill a well based
2 on your contours here in the southwest quarter that would be
3 a similar position in terms of structure and net pay?

4 A Yes, you could possibly drill a well in the
5 southwest quarter but I have a preference between drilling
6 there and drilling where we have recommended and I prefer
7 and have recommended that we drill in the northwest quarter.
8 I think that's optimal, given a choice between the two. It's
9 purely an opinion.

10 Q Looking at your Isopach, wouldn't you in
11 fact have more net pay in the southwest quarter?

12 A Where would you specifically point to?

13 Q Well, aren't there locations, standard
14 locations in the southwest quarter where you could obtain
15 more feet of net pay? I would say 1980 --

16 A Okay, what would you define as your unit
17 that you would say is a standard location, you mean --

18 Q In the west half; in the west half, that's
19 what we're talking about.

20 A Okay, you have one location. Let's say
21 you've got four possible locations.

22 Q Right.

23 A Okay. The location in the southeast
24 quarter of the northwest quarter you have less net pay.
25 Throw that one out.

1 The location in the northeast quarter of
2 the southwest quarter you have the same amount of net pay,
3 so it's equal, and I think I like the one in the northwest
4 quarter, given the choice between the two.

5 Finally, you have a location in the north-
6 west quarter of the southeast quarter and you are on a low --
7 you would get more net pay but you are on a lower position
8 structurally.

9 MR. CARR: I have nothing further on
10 cross.

11 MR. NUTTER: Do you have any redirect, Mr.
12 Atkinson?

13 MR. ATKINSON: No, we don't. Thank you.

14 MR. NUTTER: Does anyone have any questions?

15 The witness may be excused.

16 MR. ATKINSON: We'll call our next witness,
17 please.

18
19 J. K. LYTLE

20 being called as a witness and having been duly sworn upon his
21 oath, testified as follows, to-wit:

22
23 DIRECT EXAMINATION

24 BY MR. ATKINSON:

25 Q Could you please state your name?

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- 1 A. My name is J. K. Lytle.
- 2 Q. And where do you reside, Mr. Lytle?
- 3 A. In Midland, Texas.
- 4 Q. And by whom are you employed?
- 5 A. Exxon Company, U.S.A.
- 6 Q. And how long have you been employed by
- 7 Exxon?
- 8 A. About thirty-one years.
- 9 Q. And what is your capacity with Exxon?
- 10 A. I'm an engineer in the production depart-
- 11 ment.
- 12 Q. And have you previously testified before
- 13 the Commission and had your qualifications accepted as a
- 14 matter of record?
- 15 A. Yes, I have.
- 16 MR. ATKINSON: Are the witness' qualifi-
- 17 cations accepted?
- 18 MR. NUTTER: Yes, they are.
- 19 Q. Mr. Lytle, are you familiar with the sec-
- 20 tion which is in dispute here today between HNG and Exxon?
- 21 A. Yes, sir.
- 22 Q. And have you performed any studies or made
- 23 a study of the area?
- 24 A. Yes, I have.
- 25 Q. And have you arrived at any recommendations

1 based on the information you have viewed?

2 A Well, I have studied the completion and
3 performance of the wells in the area, looked at scout tickets,
4 reviewed the interpretation by our geologist, and would you
5 be more specific in asking about a recommendation?

6 Q All right. As to -- well, you've told us
7 the information you've relied upon, and forming the opinions
8 that you have. Have you made any studies as to volumes of
9 hydrocarbons beneath the north half of Section 33?

10 A Yes, I have made a volumetric calculation
11 of the hydrocarbons which I believe would be recoverable
12 under the north half of Section 33.

13 Q And have you broken down that analysis into
14 a northeast quarter and northwest quarter of Section 33?

15 A Yes. The calculation indicated that the
16 recoverable reserve under the northeast quarter would be
17 1.5 Bcf of gas plus a small amount of liquids, condensate,
18 and under the northwest quarter of Section 33 1.8 Bcf of gas.
19 Plus liquids.

20 Q And are you talking about recoverable re-
21 serves?

22 A Yes, that's using an 80 percent recovery
23 factor of the gas in place.

24 Q Now, we're taking about 1.8 Bcf in the
25 northwest quarter and 1.5 in the northeast quarter. Have

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1 you calculated what the difference is between those two
2 figures?

3 A. The difference would be 300 million cubic
4 feet of gas.

5 Q. And which of Exxon or HNG would own more
6 of this gas?

7 A. Well, Exxon would be contributing the addi-
8 tional 300 million cubic feet to the proposed unit.

9 Q. Now in your capacity as a production
10 staff engineer, have you become aware or have you had occa-
11 sion to deal with current market prices for new gas?

12 A. The market price for new gas for a well
13 drilled here would be slightly in excess of \$2.00 per Mcf.

14 Q. And that's an approximate figure, I take
15 it?

16 A. Yes.

17 Q. Now, applying that \$2.00 per Mcf figure
18 to the 300 million foot difference, what sort of dollar
19 difference does that make?

20 A. You come up with a difference of \$600,000.

21 Q. Now in the event that the north half were
22 pooled and that a well were drilled in the northeast quarter
23 of the northwest quarter as proposed by HNG, and in the
24 event that the hydrocarbons were split equally between --
25 that the hydrocarbons produced were split equally between

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1 Exxon and HNG, do you have an opinion as to whether this
2 would be an equitable distribution of hydrocarbons?

3 A. No, I believe it would be inequitable
4 because of the Exxon quarter would be contributing more gas
5 and therefore more value and with only 50 percent of the
6 well, the inequity would be in the neighborhood of \$300,000
7 to the detriment of Exxon.

8 Q. Okay. Now you heard earlier testimony as
9 to what a reasonable risk factor would be and I believe you
10 heard testimony that 200 percent was probably a reasonable
11 risk factor. Do you have an opinion as to whether that is
12 a reasonable risk factor?

13 A. I don't think that would be reasonable.
14 I think it would be way too high and my recommendation would
15 be that if this forced pooling proposal is approved and a
16 well drilled in the location that HNG proposes, which would
17 be very close to an existing producer, that a much more
18 reasonable penalty would be no greater than 50 percent.

19 MR. ATKINSON: We have no further questions.

20 MR. NUTTER: Any further questions of the
21 witness?

22 MR. CARR: Yeah, I have just a couple of
23 very brief ones.
24
25

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Lytle, are you familiar with the well that HNG has completed in Section 28 immediately north of the unit we're now talking about?

A To the extent that I know when it was completed and the initial potential and the producing rate.

Q If a well is not drilled in the next six months in Section 33, do you believe that acreage would be drained?

A Which acreage?

Q The acreage in 33, being the north half of 33?

A Yes. If there's no well drilled to offset the well in Section 28 somewhere in Section 33, well, then the drainage area for Section 28, as close as it is to Section 33, I think would have to include some portion of Section 33.

Q If a well is drilled at HNG's proposed location in the north half, do you believe that that would drain part of the acreage in Section -- in the south half of Section 28?

A If a well is drilled in Section 33 at the location which HNG is proposing?

Q Uh-huh.

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1 A. I suppose that part of its drainage area
2 could come from Section 28. I think, however, that predo-
3 minately it would come from Section 33.

4 Q. As to any production that would come from
5 Section 28, would Exxon be entitled to 50 percent of the
6 proceeds from that production?

7 A. If the proposed unit is formed Exxon will
8 get its share of the well's production, and beyond that, I
9 can't say where it would come from.

10 Q. If a west half unit is created and a well
11 drilled by Exxon in the northwest quarter, and then HNG has
12 to protect its rights and drill a well in the northeast
13 quarter of 33, do you believe all those wells are necessary
14 to produce actually the hydrocarbons that are under the
15 north half of that section? Or would the two wells, your
16 well that you're proposing in the west half and the well in
17 28 actually eventually produce the reserves?

18 A. Well, I believe that based on our inter-
19 pretation that the two wells in Section 33 would be neces-
20 sary to produce the hydrocarbons under Section 33, or the
21 equivalent amount.

22 Q. Based on your understanding of the area,
23 absent the drilling of a well in the northeast quarter of
24 33, assuming you drill in the northwest quarter, do you be-
25 lieve that well would be necessary or there would be hydro-

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1 carbons that would be left in the ground? Is that your
2 testimony?

3 A I don't understand that question. Would
4 you rephrase it?

5 Q I'll try. If a well is drilled by Exxon
6 in the northwest quarter and no other well is drilled in
7 Section 33, do you believe that hydrocarbons would be left
8 in the ground that could be recovered by the drilling of a
9 well in the northeast quarter?

10 A Yes.
11 MR. CARR: I have nothing further on
12 cross.

13 MR. NUTTER: Are there any questions of
14 Mr. Lytle?

15 MR. ATKINSON: I do have just one question
16 on redirect.

17 MR. NUTTER: Go ahead.

18
19 REDIRECT EXAMINATION

20 BY MR. ATKINSON:

21 Q As to the hydrocarbons that would be left
22 in the ground if there were a well drilled in the northeast
23 quarter of the northwest quarter -- I'm sorry, if the well
24 was drilled in Exxon's proposed location as compared with
25 the location proposed by HNG, are those hydrocarbons pre-

1 dominantly in the northeast quarter of Section 33 that would
2 be left in the ground?

3 A. I'd think the chances of it would be --
4 would be there.

5 Q. That would be HNG's property, then.

6 A. Yes.

7 MR. ATKINSON: That's all we have.

8 MR. NUTTER: Are there any further questions?

9 The witness may be excused.

10 Did you have any further direct testimony,
11 Mr. Atkinson?

12 MR. ATKINSON: No, sir, we sure don't.

13 MR. NUTTER: Mr. Carr, I wanted to ask one
14 of your witnesses, I don't know which one to direct it to,
15 about this No. 33-1. Has it made any gas and what the com-
16 pletion attempts were in the Atoka.

17 MR. CARR: Mr. Cherryhomes can testify to
18 that.

19 MR. CHERRYHOMES: Yes, sir, we perforated
20 the Atoka, 3 feet of Atoka pay, and it -- for one day it made
21 150 Mcf of gas. Based on this information we fraced the well
22 and lost all production. We produced no gas after the frac.
23 It looks like it's on the edge of the reservoir.

24 MR. NUTTER: Thank you.

25 So that completes both of your direct cases,

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1 right?

2 MR. CARR: Yes, sir.

3 MR. NUTTER: Okay, at this time we'll call
4 for -- does anyone have anything they wish to offer in the
5 case, any further testimony?

6 We'll call for statements at this time
7 and Mr. Carr as applicant, you may go last, if you wish.

8 MR. ATKINSON: If I could, I'd like to
9 move to introduce Exxon's Exhibits One through Four. I
10 guess I'd better do that.

11 MR. NUTTER: Exxon's Exhibits One through
12 Four will be admitted in evidence.

13 MR. ATKINSON: I think it's very clear to
14 you, Mr. Nutter, that this boils down to some kind of
15 shouting match between the Exxon and HNG geologists as to
16 how the limited data should be construed.

17 I think that under either interpretation
18 it is clear that Exxon is being treated inequitably if the
19 north half is pooled.

20 Now there are two cases we can go with.
21 One is the case proposed by HNG. HNG's own engineers have
22 admitted that -- own engineer has admitted that there is
23 approximately 1.9 Bcf under their interpretation contained
24 in the northwest quarter of Section 33 and .9 in the north-
25 east quarter of Section 33. Now that's a difference of 1 BCF.

1 That clearly is a very substantial inequity, which is accrued
2 to Exxon because of that is going to be going to HNG under
3 any kind of forced pooling arrangement.

4 Now, HNG has suggested that maybe that's
5 okay; maybe it's all right because the south half of Section
6 28 is going to be drained and that's HNG property and Exxon
7 gets half of that so that makes all just fine.

8 But the problem is, they have not had
9 any testimony quantitatively whatsoever by their own people
10 about how much of the south half of Section 28 is going to
11 actually contribute to any production from the northeast
12 quarter of the northwest quarter. They have made some
13 qualitative baldfaced statement about, well, it may drain
14 part of Section 28, and might, but they sure have not
15 shown that it's going to contribute an additional Bcf to
16 Exxon, to Exxon's share in that, and even if it did, that's
17 irrelevant.

18 Now, the other, the alternative interpre-
19 tation, Exxon's interpretation, clearly shows by our testi-
20 mony that there is an additional 300 million cubic foot
21 difference in the northwest and the northeast and that
22 position is not quite as inequitable to Exxon as the HNG's
23 engineer's testimony indicates that it could be; neverthe-
24 less, we're talking about \$600,000. We're talking about
25 half of that going to HNG which should rightfully belong

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1 to Exxon; that's \$300,000, and I submit that in either
2 event Exxon's correlative rights are not being protected
3 by force pooling the north half.

4 Now there's something else that -- almost
5 an equitable matter, I would ask the Commission to consi-
6 der and that is Exxon has a lease in the west half of Sec-
7 tion 33. Admittedly it has not been drilled but this area
8 is just now being developed by anyone in the last four or
9 five years, as you're aware from your records of the area.
10 As a consequence, I don't think it has any bearing on the
11 fact whatsoever that Exxon hasn't done anything since the
12 1920's on this section. They intend to and they have plans
13 for and they are committed to drill on the west half of
14 Section 33 within a six month time period that HNG has
15 proposed for its own drilling plan.

16 Now HNG has laready gotten into a unit
17 agreement with Sol West. I don't know why they did that
18 in view of the fact that their engineer testified there
19 is nothing down there. I'm not sure why they would think
20 that was such a favorable situation for HNG to be in, but
21 they did it nonetheless. I would submit that the status
22 quo is that the east half of Section 33 is in a unit,
23 is in a unitized unit between Sol West and HNG and that's
24 all hunky dory. I would submit that the west half is
25 owned by Exxon and Exxon is planning to develop it and

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1 I see no reason why Exxon should be put in the position
2 that in the southwest quarter that is strung out all by
3 itself down there, would put Exxon in the position of
4 having to go, having to approach Sol West about maybe some
5 sort of pooling agreement between the two of them or put
6 Exxon in the situation where Sol West becomes -- comes
7 before this Commission in a year or in two years and says,
8 well, I'm going to force pool Exxon's southwest quarter.
9 Now if that's not inequity, I don't know what is. It's
10 inequity twice over, and for that reason we submit that
11 Exxon's correlative rights are not being protected and
12 submit that nothing proposed by HNG is going to prevent
13 the drilling of unnecessary wells, and I see no evidence
14 demonstrating that this is going to prevent waste.

15 MR. NUTTER: Thank you. Mr. Carr?

16 MR. CARR: Mr. Nutter, we submit that
17 a careful review of the evidence will show that when we look
18 at the Atoka formation in this area and you attempt to drill
19 a commercial well, you need to drill as far north in Section
20 33 as you possibly can.

21 Another thing you have to consider is an
22 effective drainage pattern for the acreage involved, and to
23 do so you have to move away as far as you can from the well
24 drilled in Section 28, and for that reason HNG has proposed
25 drilling a well at the location they are proposing to you

1 in this application.

2 Now we submit the characteristics of the
3 Atoka in this area, when the evidence is reviewed, really
4 show that neither party has 160 productive acres in the
5 north half of Section 33. Now we admit that there's nothing
6 wrong with Exxon holding a lease for thirty years but we
7 would also point out that their response and their determined
8 decision to do something was in response to the plan of HNG.

9 Now we've heard a lot of talk about what
10 are the equities but when we look at those I think it's im-
11 portant to remember that Exxon, if the application is granted,
12 will be entitled to half of the production from the northwest
13 quarter, to half the production from the northeast quarter,
14 and to half whatever is produced from the acreage underneath
15 the south half of Section 28. This is not a situation where
16 and the application isn't the kind of an application where
17 you are called upon to try and determine the number of pro-
18 ductive acres and then devise some sort of a formula, and I
19 submit that we have drifted away from really the point of
20 the whole hearing, and I think it's essential, therefore,
21 just in closing to bring this thing back into focus and look
22 at the statute under which this application is brought.

23 It's Section 72-17, sub-paragraph C, and
24 the relevant sentence reads: "Where such owner, or owners,
25 have not agreed to pool their interest", that's what we

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1 have here, "and where one such separate owners, or owners,
2 who has the right to drill has drilled or proposes to drill
3 a well on the unit," that's what we have here at HNG's pro-
4 posal, "to a common source of supply," the Atoka, "the Division
5 to avoid the drilling of unnecessary wells," and we submit
6 the record clearly shows two wells in the north half of 33
7 are not warranted, "the division, to avoid the drilling of
8 unnecessary wells, or to protect correlative rights, or to
9 prevent waste, shall pool all or any part of such lands."
10 Shall.

11 Once you comply with these requisites, we
12 submit that it isn't discretionary, that it isn't something
13 in which the Commission is asked to weigh all the equities,
14 but once the three conditions are met, you are entitled to
15 an order. HNG stands before you having met all these re-
16 quirements. We submit we are entitled to the order and we
17 ask that the application be granted.

18 MR. NUTTER: Thank you, Mr. Carr.

19 Is there anything further in this Case
20 Number 6709?

21 We'll take the case under advisement and
22 the hearing is adjourned.

23
24 (Hearing concluded.)
25

REPORTER CERTIFICATE

I, SALLY W. BOYD, a Certified Shorthand Reporter,
DO HEREBY CERTIFY THAT the foregoing and attached Transcript
of Hearing before the Oil Conservation Division was reported
by me; that the said transcript is a full, true, and correct
record of the hearing, prepared by me to the best of my
ability from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.
Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 6709
heard by me on 11/14 1979.

[Signature], Examiner
Oil Conservation Division

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
14 November 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of HNG Oil Company for
compulsory pooling, Lea County, New
Mexico.

CASE
6709

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
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For Exxon U.S.A.:

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APPEARANCES CONT'D

For Exxon U.S.A.:

Jack A. Dalious, Esq.
Division Attorney
Southwest and Mid-Continent
Division
Exxon Co. U.S.A.

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Page 5

1 MR. NUTTER: Call next Case Number 6709.

2 MR. PADILLA: Application of HNG Oil Com-
3 pany for compulsory pooling, Lea County, New Mexico.

4 MR. CARR: May it please the Examiner, I
5 am William F. Carr, Campbell and Black, P. A., appearing on
6 behalf of the applicant. I have two witnesses that will
7 need to be sworn.

8 MR. NUTTER: Any other appearances in this
9 Case 6709?

10 MR. ATKINSON: My name is Clifford Atkinson,
11 appearing from Modrall Law Firm for Exxon.

12 MR. NUTTER: Will you have any witnesses,
13 Mr. Atkinson?

14 MR. ATKINSON: Yes, sir, we'll have two
15 witnesses.

16 MR. NUTTER: Would all the witnesses please
17 stand and be sworn at the same time, please?

18
19 (Witnesses sworn.)

20
21 MR. CARR: At this time I would call Mr.
22 Parker.

23 (There followed a discussion
24 off the record.)

25 MR. NUTTER: We'll recess the hearing

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1 until the morning, then, and we're on Case 6709.

2

3

(Thereupon the evening recess

4

was taken. Thereafter on the 15th

5

day of November, 1979, the hearing

6

was resumed, as follows, to-wit:)

7

8

MR. NUTTER: The hearing will come to order,
9 please. I believe we're on Case Number 6709. WE have called
10 the case and I believe the witnesses have been sworn, have
11 they not, all four witnesses.

12

Mr. Carr, would you proceed?

13

MR. CARR: I'd like to call Raymond Parker.

14

15

RAYMOND PARKER

16

being called as a witness and having been duly sworn upon his
17 oath, testified as follows, to-wit:

18

19

DIRECT EXAMINATION

20

BY MR. CARR:

21

Q

Will you state your full name and place of

22

residence?

23

A

I'm Raymond Parker. I live in Midland,

24

Texas, at 2007 North H.

25

Q

Mr. Parker, by whom are you employed and in

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1 what capacity?

2 A I'm employed as a land consultant by HNG
3 Oil Company, Midland, Texas.

4 Q Have you previously testified before this
5 Commission, had your credentials accepted and made a matter
6 of record?

7 A Yes, I have.

8 Q Are you familiar with the application of
9 HNG in this case?

10 A I am.

11 MR. CARR: Are the witness' qualifications
12 acceptable?

13 MR. NUTTER: Yes, they are.

14 Q Mr. Parker, will you please refer to what
15 has been marked for identification as HNG's Exhibit Number
16 One, and explain to the Examiner what it is and what it shows?

17 A Exhibit One is a land plat of the Shoe Bar,
18 so-called Shoe Bar, South Shoe Bar Field area, showing wells
19 drilled in the area together with owners of leasehold, a
20 State approved Shoe Bar Unit, and a proposed 320-acre working
21 interest unit comprising the north half of Section 33, and
22 that's it.

23 Q Is the proposed location a standard location
24 for the north half of the unit?

25 A It is.

1 Q Now, Mr. Parker, if you created a unit out
2 of either the east half or the west half of this section,
3 how far from the north line of the section would you have to
4 drill to be at a standard location?

5 A A standard location would be 1980 from the
6 north line.

7 Q Now, looking at Section 33, is all of the
8 acreage in this section State land?

9 A It is all State land.

10 Q Now does this plat reflect other HNG wells
11 drilled in the area?

12 A It does.

13 Q I'd like to direct your attention to the
14 well drilled in the northeast quarter of Section 3, and ask
15 you to explain the circumstances surrounding the drilling of
16 this well.

17 A This was proposed joint venture --

18 MR. NUTTER: Where? Where, Mr. Carr?

19 MR. CARR: In the --

20 A East half of Section 33.

21 MR. CARR: In the east half, in the north-
22 east quarter of Section 33.

23 MR. NUTTER: Okay.

24 A The owners of the east half being HNG Oil
25 Company and Sol West, et al, entered into a working interest

1 unit for the drilling of a Morrow test to be located 1980 from
2 the north and 660 from the east line of Section 23. The
3 well was drilled to a total depth of 13,000 feet. Tests were
4 made -- I won't go into the tests because I'm not qualified.
5 We'll refer that to Mr. Cherryhomes later.

6 Q All right.

7 A It was subsequently plugged as a dry hole.

8 Q And you were propping to dedicate the east
9 half of Section 33 to that well?

10 A We were, yes.

11 Q Why are you now proposing to dedicate the
12 north half of the section?

13 A Yes, sir, we are.

14 Q And why is that?

15 A We feel that if we get closer to the north
16 line of the section we can make an Atoka well.

17 Q And Mr. Cherryhomes will testify as to the
18 reason for that.

19 A He will testify on that.

20 Q What interests have committed to this unit?

21 A The entire northeast quarter, the northeast
22 quarter of Section 33 is owned jointly by HNG Oil Company,
23 Tom Ingram, Sol West, the third, and Michael Shearn. HNG,
24 as operator for these people, are proposing this working
25 interest unit.

1 Q And that means you have 160 acres that have
2 not been committed.

3 A That's right.

4 Q And this is the Exxon acreage?

5 A That's right.

6 Q Have you given Exxon notice of your inten-
7 tion to develop the north half?

8 A Yes, we have.

9 Q Will you please refer to what has been
10 marked for identification as Exhibits Two, Three and Four,
11 and explain to the Examiner what these are?

12 A Exhibit Number Two is a letter from HNG
13 Oil Company, dated August 16th, 1979, wherein we propose
14 the formation of a 320-acre working interest unit comprised of
15 the northeast section -- northeast quarter of Section 33,
16 16 South 35 East, Lea County. We set out the interest of
17 the parties. We attached later an AFE. We invited Exxon
18 to participate as a working interest owner or in lieu thereof,
19 farm out to the unit, reserving 1/16th of 8/8ths override
20 convertible to a 50 percent working interest upon payout of
21 the test well.

22 Q Now, attached to this letter is an AFE?

23 A There is, an AFE was attached to the letter
24 showing the cost of a dry hole to be \$729,713; a completed
25 well to be \$1,057,623.

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1 Q And then attached to that is a response of
2 Exxon to your proposal, is that correct?

3 A Right, response by Exxon by letter dated
4 September 25, 1979, wherein they advise that they did not
5 desire to join or farm out.

6 Q Now, Mr. Parker, do the costs reflected on
7 the AFE, are these costs in line with your experience in
8 drilling other wells in the area?

9 A Yes, sir, they are.

10 Q Will you please refer to what has been
11 marked Exhibit Number Five and review this for the Examiner?

12 A Exhibit Number Five is a form of COPAS
13 accounting procedure, the purpose of which is to show the
14 drilling well rate and the producing well rates, as shown
15 on --

16 Q Are you talking about, when you say pro-
17 ducing and drilling well rates, you're talking about the cost,
18 overhead cost or administrative cost while drilling and pro-
19 ducing the well?

20 A This is right.

21 Q Are those contained in paragraph three on
22 page three?

23 A On page three.

24 Q And what are those figures?

25 A Well, a drilling well rate is \$2679; pro-

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1 ducing well rate, \$359.

2 Q These are monthly figures?

3 A That's monthly figures.

4 Q Do you believe these figures are in line
5 with what is being charged by other operators in the area?

6 A They are somewhat less than other operators
7 are charging in the same operation.

8 Q Do you recommend that any order entered as
9 a result of this hearing incorporate these figures as appro-
10 priate costs?

11 A Yes, sir, I do.

12 Q Mr. Parker, does HNG request to be desig-
13 nated operator of this proposed well?

14 A Yes, sir.

15 Q In your opinion will granting this appli-
16 cation be in the interest of conservation, the prevention of
17 waste, and the protection of correlative rights?

18 A Yes, sir.

19 Q Were Exhibits One through Five either pre-
20 pared by you or have you reviewed them and can you testify
21 from your own knowledge as to their accuracy?

22 A I can.

23 MR. CARR: At this time, Mr. Examiner, we
24 would offer HNG's Exhibits One through Five.

25 MR. NUTTER: Exhibits One through Five will

1 be admitted in evidence.

2 MR. CARR: I have nothing further of the
3 witness on direct.

4 MR. NUTTER: Are there any questions of the
5 witness?

6 MR. ATKINSON: Yes, sir, we have a few
7 questions.

8
9 CROSS EXAMINATION

10 BY MR. ATKINSON:

11 Q Mr. Parker, I'd like to refer you to the
12 application filed by HNG in this matter. I do not have an
13 additional copy of it. Do you have a copy?

14 A I have a copy, yes.

15 Q And I'd like to refer you to paragraph one
16 of that application. It's either stating there all or in
17 part that the applicant, HNG Oil Company, you would agree
18 with me, I guess, the applicant is HNG Oil Company?

19 A Yes, I will.

20 Q Is the owner of 50 percent of the working
21 interest in and under the north half of the said Section 33
22 and has the right to drill thereon. What you really meant
23 there is --

24 A This statement is not correct in that we
25 do not own 50 percent in the north half.

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1 Q All right. Now what you meant there was
2 that you had an interest in the northeast quarter of Section
3 33.

4 A That's right.

5 Q All right. Now, with regard to paragraph
6 three, you state the applicant has sought and obtained vol-
7 untary agreement for all other working interest owners in
8 the north half of Section 33, except Exxon Company, U.S.A.
9 What other working interest owners are there in the north
10 half of Section 33 other than Exxon?

11 A All right. In the northeast quarter of
12 Section 33, HNG Oil Company is owner of a leasehold interest
13 of 33.2986 percent. Tom Ingram of Roswell, owner of 33.3507
14 percent. Sol West the third, 25.3507 percent; and Michael
15 Shearn, 8 percent.

16 Q Now, I'd like to ask you with regard to
17 the Shoe Bar Ranch Unit, which is to the southeast, I believe
18 of Section 33.

19 A Yes, this is right.

20 Q Who are the owners, who are the working
21 interest owners?

22 A The same parties that I just read out.

23 Q So the same parties have an interest in
24 the northeast quarter of Section 33 --

25 A This is right.

1 Q -- and have identical interests in the
2 Shoe Bar Ranch Unit?

3 A That's right.

4 Q Now, with regard to the east half of Sec-
5 tion 33, in approximately March of 1979 do you recall HNG's
6 applying for a communitization agreement between HNG and
7 Sol West?

8 A I do, east half.

9 Q All right, and what was the purpose of
10 that communitization agreement?

11 A The purpose of the communitization agree-
12 ment was to get it in the hands of the State Land Office so
13 that the well, we were successful and the well was a producer
14 we could communitize the two pieces, bearing in mind that
15 the southeast quarter is part of the Shoe Bar Unit, which
16 is past its primary term and is held by terms of the State
17 approved unit. We have met the plan of development require-
18 ments for the State.

19 Q All right. Now, I'd like to ask you a
20 question. Under the terms of the communitization agreement,
21 what does production on the northeast quarter of Section 33
22 accomplish insofar as the southeast quarter of Section 33
23 is concerned?

24 A Well, the communitization agreement has
25 accomplished nothing because the well was a dry hole.

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1 Q Okay. What then did the communitization
2 agreement propose to accomplish?

3 A It proposed, in the event of production of
4 gas from the Pennsylvanian formation, was to communitize the
5 lease on the northeast quarter with that on the southeast
6 quarter.

7 Q All right, and had there been production
8 achieved in the northeast quarter of Section 33, would you
9 agree with me then that the southeast quarter of Section 33
10 would have participated in that production?

11 A It would have.

12 Q And what effect would the production in
13 the northeast quarter of Section 33 had insofar as distribu-
14 tion to the co-owners, if I can use that term, of the Shoe
15 Bar Ranch Unit? In other words, had you achieved production
16 in the northeast quarter of Section 33, you stated that the
17 southeast quarter of Section 33 would have participated.

18 A That's right.

19 Q All right, now, would that participation
20 have extended as well to the other owners of the Shoe Bar
21 Ranch Unit?

22 A It would have.

23 Q All right, and HNG owns a 33 percent inter-
24 est in the -- approximately 33 percent interest, in the
25 Shoe Bar Unit?

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1 A That's right.

2
3 MR. CARR: I'm going to object to this line
4 of questioning. It isn't relevant to anything in the case
5 before the Commission today. Participation in the Shoe Bar
6 Ranch Unit is not properly before this Commission.

7 MR. ATKINSON: Mr. Examiner, it may be
8 that this testimony may not be of help to the Commission
9 in making a determination of what is before the Commission
10 today; however, what I'm doing is laying a foundation for
11 what we will show in our case. Well, I won't go into what
12 it is we're going to show, but I'm just laying a foundation
13 for what we do hope to prove in our case as to HNG's interest
14 in the overall area.

15 MR. NUTTER: Well, I think, Mr. Atkinson,
16 that you're talking about a unit down here that did -- that
17 was communitized with a part of the acreage that was dedi-
18 cated but which is no longer dedicated to any well, and it
19 is a little far afield to get down here way into Section 3
20 when we're talking about a well in the north part of Section
21 33.

22 So I think the record shows already that
23 the Sol West interests, including Ingram, Shearn, and HNG,
24 have identical interests, apparently, in the northeast
25 quarter. Is that not correct?

A That is correct, yes, sir.

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1 MR. NUTTER: According to your Exhibit
2 One these percentages are the same percentages that you gave
3 for the northeast quarter of Section 33.

4 A. That's right.

5 MR. NUTTER: I think the ownership has
6 been established. The ownership in the unit is the same as
7 the ownership in the northeast quarter.

8 MR. ATKINSON: Yes. That's precisely what
9 I was trying to establish.

10 MR. NUTTER: Okay.

11 Q. (Mr. Atkinson continuing.) I'd like to
12 ask you a question now, if I may, in regard to the HNG well
13 which exists immediately north of Section 33.

14 A. Yes, sir.

15 Q. Is that well completed?

16 A. That was our 28-1 located 1980 from the
17 east, 660 from the south of Section 28. It was under lease
18 to Getty Oil Company. The rights were acquired by HNG by
19 farm in. The well was drilled and it is a producer from the
20 Atoka.

21 Q. And what is the approximate production?
22 The producing rate, excuse me.

23 A. I'd say in the neighborhood of 5 million
24 a day.

25 Q. All right. And approximately how far north

1 of the north boundary of Section 33 is that located?

2 A. It's 660, 660 north of the north line of
3 33.

4 Q Okay. Now, with regard to the well that
5 was drilled in the northeast quarter of Section 33, when was
6 that well commenced?

7 A I'll refer this to Mr. Cherryhomes. He
8 has all the well data.

9 Q Okay, you have no personal knowledge of
10 that, then?

11 A This is a production department function,
12 not a land.

13 Q Okay. You did testify on direct, though,
14 I believe, that it was a dry hole.

15 A Yes.

16 Q All right. You also testified, presumably
17 by your own personal knowledge, that in your opinion the
18 pooling of the northeast quarter northwest quarter of Section
19 33 would prevent waste and protect correlative rights. What
20 do you base that opinion on?

21 A There again, I think I should refer this to
22 the production geologist, who will present testimony in that
23 connection.

24 Q Okay, so you have no personal knowledge of
25 the facts which would lead to a conclusion that it will pre-

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1 vent waste and protect correlative rights.

2 A. My personal knowledge is my observation of
3 what the production people have done. It's based on that
4 entirely.

5 Q. Okay. You would agree with me that is be-
6 yond the area of your expertise.

7 A. I would say that's probably true.
8 MR. ATKINSON: We have no further questions
9 at this time, Mr. Examiner.

10 MR. NUTTER: Are there any other questions
11 of the witness?

12 MR. CARR: I have no further questions of
13 this witness.

14 MR. NUTTER: He may be excused.

15 MR. CARR: At this time I would call Terry

16 Cherryhomes.

17 TERRY CHERRYHOMES

18 being called as a witness and having been duly sworn upon
19 his oath, testified as follows, to-wit:
20

21 DIRECT EXAMINATION

22 BY MR. CARR:

23 Q.
24
25 dence?

Will you state your name and place of resi-

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1 vent waste and protect correlative rights.

2 A. My personal knowledge is my observation of
3 what the production people have done. It's based on that
4 entirely.

5 Q. Okay. You would agree with me that is be-
6 yond the area of your expertise.

7 A. I would say that's probably true.

8 MR. ATKINSON: We have no further questions
9 at this time, Mr. Examiner.

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11 of the witness?

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13 this witness.

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16 Cherryhomes.

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18 TERRY CHERRYHOMES
19 being called as a witness and having been duly sworn upon
20 his oath, testified as follows, to-wit:

21
22 DIRECT EXAMINATION

23 BY MR. CARR:

24 Q. Will you state your name and place of resi-
25 dence?

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1 A. Terry Cherryhomes. I live in Midland at
2 3502 Stanley.

3 Q. Mr. Cherryhomes, by whom are you employed
4 and in what capacity?

5 A. I'm employed by HNG Oil Company in Midland
6 as an exploitation geologist.

7 Q. Mr. Cherryhomes, have you previously testi-
8 fied before this Commission, had your credentials accepted
9 and made a matter of record?

10 A. No, I haven't.

11 Q. Would you briefly summarize for the Examiner
12 your educational background and your work experience?

13 A. Okay. I received a BS in geology from the
14 University of Oklahoma in 1955. I was employed by Humble
15 Oil and Refining Company, now Exxon. I have twenty-four years
16 experience doing exploitation and exploration geology in
17 south Louisiana, north Texas, west Texas, and New Mexico.

18 Q. Have you testified before other administ-
19 rative bodies?

20 A. Yes, sir, I was qualified and have testi-
21 fied in Austin, Texas.

22 Q. Are you familiar with the application of
23 HNG in this case?

24 A. Yes, sir.

25 MR. CARR: Are the witness' qualifications

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1 acceptable?

2 MR. NUTTER: Yes. Are you a consultant or
3 are you an employee of HNG?

4 A. No, sir, I'm an employee of HNG.

5 MR. NUTTER: How long have you been with
6 HNG?

7 A. I've been with HNG since November the 1st,
8 1977, two years.

9 MR. NUTTER: Uh-huh, and how long were you
10 with Humble?

11 A. Twenty-two years and five months.

12 MR. NUTTER: Okay, thank you. He is
13 qualified.

14 Q. Mr. Cherryhomes, have you prepared a study
15 of the area which is the subject of this case?

16 A. Yes, sir.

17 Q. Will you please refer to what has been
18 marked for identification as Exhibit Number Six and summarize
19 the data contained thereon?

20 A. Okay. Exhibit Number Six is a gross Iso-
21 pach map of the Atoka Sand that produces in the wells that
22 are indicated by the red triangles. It shows the completions,
23 the Atoka completions, and the dry holes. It shows the gross
24 Atoka Sand found in each of the wells along this trend.

25 Q. Does it also reflect Morrow completions?

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1 A Yes, sir, it does.

2 Q Would you describe the type of formation
3 you believe is encountered in the Atoka formation?

4 A Okay. As shown on this Isopach, this sand
5 is interpreted to be a point bar stream channel sand. It is
6 trending roughly northwest/southeast.

7 Q And what do you mean by a point bar deposit?

8 A A point bar deposit is where the stream is
9 meandering and cutting out on one side of the stream and
10 depositing sand on the other side of the stream.

11 Q And you anticipate encountering production
12 where the sands have been deposited --

13 A Yes, sir.

14 Q -- during that process.

15 A That's correct.

16 Q Now, based on your exhibit, where do you
17 believe the greatest chance of drilling a commercially suc-
18 cessful well would be in Section 33?

19 A At the location proposed on this plat,
20 which would be 1980 from the west line and 660 from the
21 north line of Section 33.

22 Q Do you believe that you have a better
23 chance of making a commercial well there than if you turned
24 the unit, having a stand-up unit and then drilling farther
25 to the south at a standard location?

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1 A Yes, I do.

2 Q Do you believe that the closer to the north
3 you get, the better the chance you have for a commercial
4 success?

5 A Yes, I do.

6 Q Then why can't you drill this well in the
7 northeast quarter of this section?

8 A In the northeast quarter of Section 33?

9 Q Yes, sir.

10 A Based on the well control, the dry hole,
11 and the closeness to the producing well to the north, I be-
12 lieve it would be better to drill it as is shown on this plat.

13 Q If you drill it as it is shown, are you
14 farther away from the well drilled immediately to the north
15 in Section 28 than you would be if you drilled in the north-
16 east quarter?

17 A Yes.

18 Q In your opinion would this result in more
19 effective drainage of the Atoka Sand?

20 A Yes.

21 Q Mr. Cherryhomes, in your opinion would two
22 producing wells in the north half of Section 33 be a prudent
23 way to produce this acreage?

24 A No way.

25 Q Do you believe the second well would be an

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1 unnecessary well?

2 A Yes, sir, I do.

3 Q In your opinion would this constitute econ-
4 omic waste?

5 A Yes.

6 Q What direction do you believe this formation
7 is trending?

8 A As shown on this Isopach, northwest/southeast
9 on the portion that's Isopached here.

10 Q And what do you base this on?

11 A I base this on the subsurface control that
12 we have with the twelve wellbores that are shown on this.

13 Q Now, if you drilled at an orthodox location
14 in the east half of this section, how far from the north line
15 would you have to drill?

16 A 1980 feet.

17 Q Do you believe you would get a commercial
18 well?

19 A No, I do not.

20 Q Do you believe if you drilled 1980 from
21 the north line in the northwest quarter you would obtain a
22 commercial well?

23 A No, I do not.

24 Q If you were to drill a well in the northeast
25 quarter, would it require an unorthodox location?

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- 1 A. Yes.
- 2 Q. And even at an unorthodox location, you
- 3 don't believe this is the optimum location in the north half?
- 4 A. That's correct.
- 5 Q. What percent of the wells in this area,
- 6 the Atoka wells, have been commercial successes, approximately?
- 7 A. Approximately 50 percent.
- 8 Q. Do you consider drilling this well a high
- 9 risk venture?
- 10 A. I sure do.
- 11 Q. Are you prepared to make a recommendation
- 12 to the Examiner as to the risk factor that should be assessed
- 13 against those who do not participate in the drilling of the
- 14 well?
- 15 A. I would recommend a maximum risk of 200
- 16 percent.
- 17 Q. Do you believe that drilling a well as pro-
- 18 posed will enable you to protect your correlative rights in
- 19 the northeast quarter, as well as -- of this section?
- 20 A. Yes.
- 21 Q. Do you believe that drilling as you are
- 22 proposing would in any way impair the correlative rights of
- 23 any other operator in the area?
- 24 A. No, I do not.
- 25 Q. Now, do you believe the entire northwest

1 quarter of Section 33 is productive of hydrocarbons in the
2 Atoka?

3 A. Not as the Isopach shows, I don't believe
4 that the entire northwest quarter will be productive.

5 Q. If a well was drilled at a standard loca-
6 tion on a unit comprising the west half of Section 33, do
7 you believe a commercial success would be obtained?

8 A. Not according to my interpretation, I do
9 not believe.

10 Q. And it is your opinion, I believe you
11 stated, that granting the application would prevent waste
12 and protect correlative rights?

13 A. That's correct.

14 Q. Was Exhibit Six prepared by you?

15 A. Yes, sir.

16 MR. CARR: At this time, Mr. Examiner, we
17 would offer into evidence HNG's Exhibit Six.

18 MR. NUTTER: HNG's Exhibit Six will be ad-
19 mitted in evidence.

20 MR. CARR: I have nothing further on direct.

21 MR. NUTTER: Any questions of the witness?

22 MR. ATKINSON: Yes, sir, we do have a few
23 questions.

24

25

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CROSS EXAMINATION

BY MR. ATKINSON:

Q Yes, Mr. Cherryhomes, I'm just -- for my own personal information, what is an exploitation geologist?

A It's what we call a production geologist, as related to an exploration geologist. We do more field mapping and well site type geology, reservoir type mapping.

Q Okay, so it's sort of the next phase beyond exploration, I guess?

A No, sir, exploration would be doing regional type geology over a large area, whereas, we would be doing more detailed type work within a reservoir.

Q All right.

A Roughly.

Q Well, now, how much of the detailed work, as you call it, have you personally done out in this area, this Section 33, specifically? Have you done all this work yourself?

A I have done this work that's shown here.

Q All right. Now, let me ask you, when was this particular exhibit, or the exhibit from which it was derived, or the map from which the exhibit was derived, when was this drafted by you?

A In October, as is shown.

Q Okay.

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1 A Or prior, shortly, you know, just before
2 it was made into an exhibit.

3 Q All right. So the map that this was made
4 from was also made in October of 1979, is that correct, or
5 was it an earlier map?

6 A The actual work was being done as we have
7 developed the field.

8 Q Over what period of time would that be?

9 A A year and a half, I would say.

10 Q How much of that work has been done, would
11 you say, since March of 1979?

12 A March of 1979?

13 Q Yes, sir, it would be about six monthes or
14 so ago?

15 A Probably, it's been in this form for prior
16 to that.

17 Q Prior to March, 1979?

18 A Yes. Of course, it's been revised as we've
19 drilled each well, which, as you can see on here, it's risky
20 and the data you receive may not be what you were expecting
21 when you drilled the well.

22 Q How many wells have been -- have been
23 finished out here since March of 1979?

24 A Let's see. Are you talking about having
25 been drilled out here?

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1 Q Yes, sir. I don't want to say completed
2 because I realize you all finished a dry hole out there, and
3 how many wells -- what I'm asking is how much additional
4 information have you all obtained throughout this area since
5 March of 1979? You told me it was -- that it depends on the
6 wells that have been drilled, and I'm curious how many wells
7 have been drilled to completion out here since March of '79.

8 A Well, the 33-1 was spudded in March and
9 abandoned in September.

10 Q Okay, that's your dry hole in the northeast
11 quarter of Section 33?

12 A That's correct, and then the well in the
13 northwest quarter of Section 34 was drilled after the well
14 in the northeast quarter of Section 33.

15 Q Okay. Northwest quarter of Section 34.

16 A The New Mexico State 34-1.

17 Q Okay.

18 MR. NUTTER: When was it completed?

19 A It was -- I don't have the completion date
20 at hand, but it was drilled after the abandonment of the 33
21 No. 1.

22 MR. NUTTER: Was it spudded after the aban-
23 donment?

24 A Yes, sir.

25 MR. NUTTER: And the 33-1 was abandoned in

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1 September of '79?

2 A. Yes, I believe I have -- the well, the 34-1
3 was spudded after the 33-1 reached a total depth, I should
4 say.

5 Q. Okay.

6 A. Sometimes the dry holes are not actually
7 abandoned, you know, immediately, or there may be other reasons.

8 Q. Well, now, what kind of effect did the dry
9 hole in 33-1 and the completed well in 34-1, what kind of
10 effect did that have on your interpretation of this area?

11 A. The, of course, we drilled the 33-1 between
12 the two producers that had already, you know, were known to
13 be producers, and the pay was expected to be greater, and
14 of course it was less, so it caused a slight revision in the
15 map.

16 Q. What effect did that have on your estimated
17 reserves for the south half of Section 33?

18 A. We have our reservoir engineer here that
19 we could direct that question to.

20 Q. Is he going to be called as a witness?

21 MR. CARR: I'll call him.

22 A. As you can see, based on my Isopach, I show
23 that at the present time the southeast quarter of Section 33
24 would be nonproductive.

25 Q. Okay. Well, now, with regard to your Iso-

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1 pachs and without talking about actual reserve calculations,
2 what kind of effect did the drilling of the well in the north-
3 east quarter of Section 33 and the northwest quarter of Sec-
4 tion 34 have on your Isopach map in the south half of Section
5 33?

6 A It actually had very little effect.

7 Q Okay, so prior to drilling those wells, if
8 I understand you correctly, prior to the time that 33-1 was
9 spudded, you felt that the southeast quarter of Section 33
10 was essentially barren based on your Isopachs?

11 A No, that is not correct. It has been revised
12 due to the data that we received on the 33-1.

13 Q Okay.

14 A Of course, the location of the well in
15 33-1 was located at the better location, as contrary to the --
16 to a location in the south half or the southeast quarter of
17 Section 33.

18 Q Well, what I'm trying to get at is what
19 kind of revision of your Isopach map came about as a result
20 of the wells that were drilled in Section 33 and Section 34
21 since March of 1979.

22 A I don't know for sure I understand what
23 you're saying.

24 Q Okay. As I see this right now, just bearing
25 with me for my bad description here, the zero Isopach comes

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1 in roughly from the northwest and swings around where it's ---
2 start up here in this corner. It comes in from the north-
3 west, heads sort of southeast, swings back to the east and
4 drops to the south and swings back around to the southeast
5 again, just roughly. Do you agree with that?

6 A That's --

7 Q Realizing that's not real accurate, but --

8 A That's correct.

9 Q Okay. What I'm interested in is what that
10 Isopach did prior to the time that you completed 33-1 and
11 34-1.

12 A Okay. I do not have that map before me
13 here. It cut down on the pay that would have been shown in
14 at least a portion of the southeast quarter of Section 33.

15 Q So the southeast quarter of Section 33,
16 then, prior to the drilling of these two wells, showed more
17 pay or less pay?

18 A More pay.

19 Q All right, and what effect did that have
20 on the southwest quarter?

21 A It honestly had no effect on the southwest
22 quarter. As you can see, we had control on the wells in
23 Section 3 and in Section 34, and based on the rate of thick-
24 ness of the pay, as shown on this Isopach, and with the well
25 in Section 28 having been completed, the trend, as it's set

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1 up, would have shown more pay in the southeast quarter prior
2 to the drilling of Section 31 but not significantly more and
3 probably very little or none in the southwest quarter of
4 Section 33.

5 Q So I guess you'd agree with me, then, that
6 well control is crucial and is in fact determinative of where
7 your Isopachs actually lie, then, I guess, as far as your
8 plotting of Isopachs is concerned.

9 A Well, sure.

10 Q All right. Now, have you done any seismic
11 work out here that would allow you to have some other type of
12 control?

13 A We have seismic in this area.

14 Q Okay, is your interpretation -- is your
15 Isopach map, or any interpretation you have done of this area
16 based on the results of seismic surveys?

17 A Yes, it's been used in the interpretation.

18 Q And you've relied on that information to
19 develop your interpretation of it?

20 A Partially. We use all the information that
21 we can, you know, gather.

22 Q Did you bring the information with you to-
23 day?

24 A No, sir.

25 Q Did you --

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1 A I did not bring any information.

2 Q Has it been brought today, to your knowledge?

3 A Seismic information?

4 Q Yes, sir.

5 A No.

6 Q Did you perform any structural mapping or
7 surface mapping surveys which would have aided in your inter-
8 pretation as well?

9 A I have done no structural mapping on this
10 particular sand to speak of.

11 Q All right. So then, correct me if I'm
12 wrong, we've established then, that in your interpretation
13 you have relied upon your well control and to a certain ex-
14 tent on your seismic information.

15 A Yes.

16 Q Okay. What else have you relied upon in
17 interpreting the reserves, et cetera, in this area?

18 A Basically what I've described to you.

19 Q Just those two things, then?

20 A Basically, yes, the well control and the
21 seismic.

22 Q Now, let me ask you a question, if I may,
23 about the well in the south half of Section 28. Mr. Parker
24 testified that is a producing well.

25 A Yes, that's right.

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1 Q Around 5 million cubic feet per day, is
2 that correct?

3 A That's correct.

4 Q Would it be a source of concern to HNG if
5 another well were drilled near that north line of Section 33
6 upon which HNG was not the operator, in your opinion? As a
7 geologist?

8 A At what location?

9 Q Okay. You have a well in the south half
10 of Section 28 and in your opinion as the exploitation geolo-
11 gist for this area, would you be concerned if someone else
12 drilled a well near the north half of Section 33, someone
13 other than HNG, which was operated by someone other than HNG?

14 A No.

15 Q So HNG is not at all concerned about the
16 possibility of offset by somebody else, then?

17 A We -- we proposed the well to Exxon to
18 either join or farm out, and we would not have proposed it
19 had we been concerned about someone else drilling that well.

20 Q Yes, sir, what I'm trying to get at, as I
21 understand it, HNG is applying to be the operator in this
22 thing as well, is that correct?

23 A That's correct.

24 Q All right. If Exxon alone had desired to
25 drill on the northeast quarter or the northwest quarter with-

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1 out any joinder by HNG, would HNG have been concerned about
2 that, or would you have been concerned, as the exploitation
3 geologist?

4 A Without any joinder, what do you mean?

5 Q Well, excuse me. As I understand it, what
6 we're trying to do here, is HNG would like to pool the north
7 half of Section 33.

8 A That's what is being proposed.

9 Q Okay, and HNG would be the operator of the
10 well and the proceeds would apparently be split 50-50 between
11 HNG and Exxon under the proposal, is that your understanding?

12 A Yes. HNG and our partners.

13 Q Yes, sir, I'm sorry, HNG and associates
14 would get 50 percent and Exxon would get 50 percent.

15 A Right.

16 Q And my question to you is, if Exxon itself
17 let's just take a hypothetical. Let's say that the west half
18 of Section 33 were being developed by Exxon.

19 A Yes.

20 Q And just say, as a hypothetical, that Exxon
21 alone wanted to put a well up in the northeast quarter of the
22 northwest quarter of Section 33 in an unorthodox location,
23 would that have bothered HNG at all as far as their -- as far
24 as their well in the south half of Section 28? Would that
25 have bothered you as exploitation geologist?

1 A. If you set up your proration unit on the west
2 half of Section 33?

3 Q. Yes, sir, without any joinder by HNG or
4 participation in the well?

5 A. Your location would not be as it is shown
6 on this map here.

7 MR. NUTTER: He said it was a non-standard
8 location at that point.

9 A. It would -- I guess each well would be a
10 matter of concern.

11 Q. Okay, would this particular well, being
12 close to your well in the south section -- the south half of
13 Section 28, be of more concern than some other well might be?

14 A. I believe you're getting into the realm of
15 our reservoir engineers.

16 Q. Okay, so you're not qualified then to tes-
17 tify, you don't feel, about whether the location of a parti-
18 cular well is -- presents any -- has any particular type of
19 effect on the -- on the reservoir as a whole, is that what
20 you're saying?

21 A. Basically.

22 Q. Okay. Now, you testified earlier that you
23 felt that the location of a well on the northeast quarter
24 northwest quarter of Section 33, as proposed by HNG, is in
25 your opinion a good location for that well.

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1 A. It's a better location -- I believe I was
2 asked in my opinion if it is a better location than a well
3 located in the northwest quarter of the northeast quarter of
4 Section 33, based on my opinion as to drainage, because it
5 would be farther distance from the well in Section 28 then.

6 Q From the dry hole -- or from 28? I see.

7 A. Yes, sir.

8 Q Okay. Would you explain to me just briefly
9 what a point bar stream channel sand is?

10 A. Yes, I could. Have you --

11 Q I don't want you to teach me geology. I'm
12 just curious about what kind of --

13 A. Okay. Have you observed a present day
14 stream, say, as you're flying between here and any place,
15 Roswell or anywhere?

16 Q Yes, sir, I sure have.

17 A. As they -- as they -- the stream is running
18 this way, in this direction, as they meander then they tend
19 to cut out on one edge of the stream and deposit that sand
20 within that meander in a different position, and as they
21 move around they -- they just cut out and then deposit sand.

22 Q How does that differ with a braided stream
23 deposit?

24 A. A braided stream deposit?

25 Q Yes, sir.

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1 A. Would more or less branch out into different
2 distributaries, you might say.

3 Q So it wouldn't be along the main channel,
4 then, is that the idea?

5 A It could be that way. I don't have a con-
6 trol here to determine that. I believe I said in my opinion
7 this is a point bar type of deposit.

8 Q Now, with regard to the -- if we could take
9 Section 33 and sort of draw a diagonal line from the north-
10 west corner down to the southeast corner, making the two
11 triangles, with regard to the triangle that's down there
12 roughly in the southwest, say the southwestern triangle of
13 Section 33, see what I'm talking about there?

14 A Uh-huh.

15 Q Now, why don't you have more detail down
16 there? Why do you just have the zero and that's all?

17 A There's no well control.

18 Q And so what does that mean to you as the
19 exploitation geologist, as far as your ability to interpret
20 what happens down there?

21 A It would be an interpretation. The further
22 you get away from the well control the more interpretation
23 you would apply.

24 Q So it's a question of inference from --
25 from the well control you do have further to the northeast,

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1 then?

2 A. Yes, sir.

3 Q And I think you'd agree with me that in any
4 given set of data points in a case like this, that there are
5 alternative interpretations which can be made by other geolo-
6 gists, and geologists' opinions will differ.

7 A. That's correct.

8 Q Let me ask you a question, if I may, about
9 your dry hole, now, 33-1, is that what that's called?

10 A. That's correct.

11 Q Okay. I believe you testified earlier that
12 that well was drilled to a depth of around 13,000 feet, or
13 13,300?

14 A. 13,000 feet, I believe, is correct.

15 Q And did you intercept the Atoka?

16 A. Yes, we did.

17 Q And how many feet is that?

18 A. As the exhibit shows, 3 feet.

19 Q Okay. And you considered there to be 3
20 feet of pay thickness there in that hole? Would that be the
21 correct terminology?

22 A. Yes, that's correct.

23 Q All right. Now, when you're talking about
24 pay thickness, or in this Isopach map generally, what kind
25 of porosity are you talking about?

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1 A It varies.

2 Q Okay. What do you consider the sort of
3 lower limit was an acceptable porosity?

4 A The thickness of the sand is as important.
5 As you get thinner in this sand, probably the percent of por-
6 osity in it here, I would say.

7 I'm not -- I really -- I don't know what --
8 I don't have a figure in mind as to the lower cutoff on what
9 would be productive as porosity.

10 Q All right. Well, if that's the case, then,
11 the Isopachs we're looking at here, that just means 3 feet
12 of Atoka Sand, and that's it.

13 A It's a gross Isopach of the -- that's what
14 gross is.

15 Q All right. So that that's without any
16 reference to whether that in fact has a sufficient porosity
17 to be a productive zone or how that compares with other zones
18 that are productive, as far as porosity is concerned.

19 A Well, yes. As you could -- well, state
20 that again. I'm not sure I'm answering your question right.

21 Q Okay, I didn't mean to confuse you and I'm
22 sure it's the nature of my question. I'll try it again.

23 What I'm asking you is this: Well, maybe
24 I'd better start this way. How do you identify the Atoka
25 Sands? How do you differentiate them from other --

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1 A By log correlation.

2 Q All right, and there's something, the unique
3 physical character about them that allows you to identify the
4 Atoka Sands, then.

5 A They're correlative on the logs.

6 Q Okay. Now what I'm asking you, is that the
7 thicknesses that are shown here demonstrate the thickness,
8 the entire thickness of the Atoka Sands in the wellbore.

9 A That's correct.

10 Q And without reference to any other para-
11 meters that might have effect on the productivity of that
12 zone.

13 A We're, of course, more limited in a 3-foot
14 sand on the amount of effective porosity you could have than
15 in a wellbore that has more.

16 Q Well, did you consider porosity at all, is
17 what I'm trying to ask you?

18 A Yes, we did.

19 Q Okay. To what extent did you consider
20 porosity?

21 A We set pipe and tested this sand.

22 Q You came up with porosity readings, then,
23 on it?

24 A Yes.

25 Q All right. And you said that you consider

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1 those in determining this Isopach. What I'm asking you is
2 was there a lower limit that you used as being an unacceptably
3 low porosity?

4 MR. NUTTER: I'm not sure if you two guys
5 are talking about the same thing.

6 MR. ATKINSON: Maybe we're not.

7 MR. NUTTER: I think you're talking about
8 net porosity, or net Atoka Sands, and I believe this map here
9 is on gross.

10 MR. ATKINSON: All right. Well, that's what
11 I was trying to bring out.

12 MR. NUTTER: Mr. Cherryhomes?

13 A Yes, sir.

14 MR. NUTTER: I think what he's driving at
15 is your exhibit here states that this is gross Atoka Sand.

16 A Yes, sir.

17 MR. NUTTER: Now, in computing gross Atoka
18 Sand, say 25 feet in one well here, are you considering poro-
19 sity in that or just gross Atoka Sand?

20 A This is gross Atoka Sand.

21 MR. NUTTER: Okay, so porosity has no
22 bearing, or the quality of the pay in that Atoka Sand has
23 no bearing in arriving at a gross figure, does it?

24 A No, sir.

25 MR. NUTTER: Okay.

1 A It doesn't. I'm sorry, I wasn't for sure
2 what you were, you know, leading to.

3 MR. ATKINSON: Well, no, it was my fault.
4 Well, I wasn't sure either, so --

5 Q (Mr. Atkinson continuing.) Now, you stated
6 that you had about 3 feet of gross Atoka Sand in your dry
7 hole at 33-1?

8 A Yes, sir. Now, this is the same sand that
9 is producing in these wells with the red triangles.

10 Q Okay. As far as -- well, okay. So the
11 zero line that you have drawn in there near your 3-foot
12 thickness maybe isn't quite accurate as to being one-third
13 of the way between the zero and the 10-foot line, I guess.
14 There's a little bit of --

15 A There's a little -- I know what you're
16 driving at there.

17 Q Okay, so once again, it really is a question
18 of interpretation, I suppose?

19 A That's correct.

20 Q And you actually have nothing to the -- if
21 you take a straight line and match up your well in the south
22 half of Section 28 with your 33-1, with the well in the north
23 half of Section 3, those three form a pretty straight line
24 right there.

25 A Yes, they do.

1 Q And you just look down the northwest there,
2 and you have no control to the south -- I'm sorry, southwest,
3 you have no control to the southwest, which in fact shows that
4 you have a zero contour line down there.

5 A That's -- until you move down in Section 11.

6 Q Okay, that's down about maybe another mile
7 and a half or two miles below your -- or to the southeast of
8 your Section 3 well, your 3-1.

9 A It's a mile from there.

10 Q Okay. All right, but that is away from the
11 vicinity of Section 33.

12 A Yes.

13 Q Okay. So that is your only control point
14 for determining that your zero contour line even exists at
15 all to the southwest of that line we talked about a moment
16 ago.

17 A That's correct. There's no well control.

18 Q Was there anything on your seismic data,
19 even though you do not have it with you, was there anything
20 on your seismic data that led you to believe that was a zero
21 contour line?

22 A The points that are on this exhibit influence
23 the interpretation that's shown on this exhibit.

24 Q Okay. What I'm asking you is that earlier
25 we talked about the fact that your seismic information did

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1 have a bearing on your -- on how you interpreted this area,
2 I believe.

3 A That's correct. In interpreting a point
4 bar type sand, this is the interpretation that I came up
5 with based on the well control as shown on this map.

6 Q Okay, and your seismic data.

7 A That's correct.

8 Q All right. Now, all I'm trying to ask you
9 about is this: We established, I think you will agree with
10 me, that you have no well control to the southwest of the
11 line that we're talking about, which would establish the ex-
12 istence of a zero contour, and that is inferential only,
13 based on your -- on the control you do have to the northeast.

14 A That is my interpretation.

15 Q Yes, sir, now I understand that.

16 A Okay.

17 Q Now what I'm asking you is whether you have
18 any other information, such as seismic data, that would indi-
19 cate the existence of something that would correlate with the
20 zero contour line to the southeast, the southwest of the line
21 we were talking about?

22 A No. This -- I know what you're talking --

23 Q Okay.

24 A This -- I know what you're talking about.

25 This is interpretive.

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1 Q Yes, sir.

2 A We didn't expect this well in 33-1 to have
3 only 3 feet of Atoka Sand when we drilled it.

4 Q Oh, I'm sure that's understood. That's
5 right.

6 A And we are 2500 feet from the well in Sec-
7 tion 28. We go from 3 feet to 31 feet.

8 Q Uh-huh.

9 A The well up in the northwest quarter of
10 Section 21, you have two wells there 1320 feet apart, zero
11 feet to 20 feet. This is highly erratic development and
12 it's highly interpretive development, geologically, on the
13 map, anyway.

14 Q And actually, I guess, referring to that
15 Section 21, maybe that's what you were talking about, you've
16 got a -- is this an Amoco well up there in the northwest
17 quarter of Section 21?

18 A That's correct.

19 Q You've got -- what would you say the dis-
20 tance is between the dry hole, which is pretty much in the
21 middle of Section 21 --

22 A It's roughly 1320 feet, I believe.

23 Q Okay, that's what you were talking about
24 a moment ago, then.

25 A Yes.

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1 Q Okay. So in fact, it would seem that it's --
2 because this area is kind of interpreted, I guess, it's dif-
3 ficult to use a broad brush to interpret what's going to hap-
4 pen. Would you agree with that?

5 A Are you trying to say that there can be
6 other geologic interpretations of this area?

7 Q Well, what I'm trying to get at is that --
8 would you agree with me that it is difficult to interpret
9 what will happen at a distance from a well control area?

10 A Sure.

11 Q Okay, and that is evidenced by other dry
12 holes and producing wells that are in a reasonable proximity
13 to one another within this same zone.

14 A That establishes the risk that we see in
15 this area of drilling wells.

16 Q All right. Now, in your testimony earlier,
17 I just want to clarify something, you testified that you felt
18 that the proposed HNG plan would prevent the drilling of un-
19 necessary wells, I believe.

20 A Yes, I believe that was asked.

21 Q Okay. Do you agree with that, though, that
22 the proposed HNG plan is going to prevent the drilling of
23 unnecessary wells?

24 A I -- I'm not for sure what you're getting
25 at.

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1 Q Well, no, I'm asking, Mr. Carr asked you
2 whether in your opinion the proposed well in the northwest
3 quarter of -- I'm sorry, the northeast quarter of the north-
4 west quarter of Section 32 and the pooling of the northeast
5 and northwest quarters of -- did I say 32, I meant 33 -- and
6 the pooling of the north half of Section 33, would result
7 in the -- or would prevent the drilling of unnecessary wells
8 in this section.

9 A Based on my interpretation here, yes.

10 Q Okay. Now, if your interpretation -- if
11 there were information available, or if your interpretation
12 happened to be incorrect, and if it in fact were shown that
13 the west half of Section 33 had a substantial pay zone, as
14 a hypothetical, that would no longer be true, then, would it,
15 that it would prevent the unnecessary drilling -- the drilling
16 of unnecessary wells?

17 A I'm not -- I don't understand your question.

18 Q Okay. We have assumed -- you assumed that
19 in making your statement that it would prevent the drilling
20 of unnecessary wells --

21 A This location that I'm showing on the map?

22 Q Yes, sir.

23 A Yes.

24 Q You have assumed that there would be a well
25 as indicated on the map and that the north half of Section 33

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1 would be pooled. My question to you is this: If you change
2 your basic assumptions, if the geologic interpretation were
3 different, as a hypothetical, if it could be shown that the
4 west half of Section 33, the entire west half, had a substan-
5 tial pay zone, then your statement would no longer be correct.

6 A. I prefer to stick with the data I have
7 here and my interpretation of this area.

8 Q Yes, sir, well, I understand your preference
9 for going with your own interpretation. I'm asking you as a
10 hypothetical, in your opinion as an expert exploitation geo-
11 logist, if the west half of Section 33 demonstrated substan-
12 tial pay zone throughout the entire west half --

13 A. There's no data at this time that indicates
14 that and I'm not going to step out on a limb and make a pre-
15 diction on it.

16 Q No, sir, I wouldn't ask you to make a pre-
17 diction. I'm asking you, as a hypothetical question, if that
18 were shown, without regard to anything that you have before
19 you, asking in your expert opinion, if that were shown, then
20 your statement that the enactment of the -- that the pooling
21 of the north half of Section 33 would prevent the drilling
22 of unnecessary wells would no longer be correct, would you
23 agree with me on that?

24 A. You're still hypothetical there. I have
25 nothing to indicate that there's any pay in the southwest

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1 quarter of 33.

2 Q Well, I don't want to get into an argument
3 with you because you know a lot more about it than I do.
4 I'm just asking as a hypothetical question, you've admitted
5 that the area is subject to alternative interpretations.

6 A I'm not -- I don't feel that I should an-
7 swer that. I don't know that there's any pay in the southwest
8 quarter, based on my well control that this map was contoured
9 on. My map shows a zero foot line. Even if you didn't put
10 the zero foot line, you have control from 3 feet on up to 10
11 and 20, and this is my interpretation.

12 Q Yes, sir, I understand it's your interpre-
13 tation. Are you saying that there is no other way that that
14 can be interpreted?

15 A No.

16 Q Okay. If there is an alternative inter-
17 pretation, based on the data points that you have before you,
18 and if that alternative interpretation showed a pay zone in
19 the west half of Section 33 --

20 A We don't have a well in the west half of
21 33.

22 Q Yes, sir, I realize that. I'm asking you
23 if we had an alternative interpretation which showed a pay
24 zone in the west half of Section 33, would it still be true
25 that to pool the north half would prevent the drilling of

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1 unnecessary wells? In your expert opinion.

2 A A proration unit formed with the south half
3 of Section 33 would solve that.

4 Q Well, I'm asking a hypothetical question.
5 Will you answer it, please?

6 A You're asking something that I have no data
7 on.

8 Q Okay, let me ask you this: If it were
9 shown as a matter of interpretation that the west half of
10 Section 33 had a substantial pay zone throughout the entire
11 west half of Section 33, would your statement that the pooling
12 of Section -- of the north half of Section 33 will protect
13 correlative rights, would that still be true, in your opinion?

14 A It will based on the data that we have
15 right now.

16 Q So you're not willing to accept any other
17 interpretation, then?

18 A There can be other interpretations. I made
19 this interpretation on facts. That's my interpretation.

20 Q I understand that.

21 MR. NUTTER: I don't believe he's going to
22 buy your hypothetical situation, Mr. Atkinson.

23 MR. ATKINSON: I get that idea.

24 MR. NUTTER: Maybe after you show this pay
25 over here you can call him back on then and ask him about it.

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1 MR. ATKINSON: Well, I think I'm going to
2 have to move along. I think you're right about that. I
3 tried, at least.

4 Q Oh, I know one thing I wanted to ask you.
5 Now, by the Atoka, when you're talking about the gross Atoka
6 Sand, approximately where does the Atoka lie with respect to
7 the Morrow?

8 A It's above the Morrow.

9 Q Okay. Would you say immediately above the
10 Morrow?

11 A The Atoka section varies in thickness. The
12 base of the Atoka becomes the top of the Morrow.

13 Q Okay.

14 A Based on our nomenclature.

15 Q All right, that's fine.

16 I guess there's one last point I'd like to
17 ask you about, which is really a reiteration of what we've
18 already talked about.

19 If you just draw a line between the well
20 in the south half of Section 28 and the northeast quarter of
21 Section 33, just draw a line and just look immediately to
22 the west of there over at the northwest quarter of Section
23 33, what do you have over there that indicates that you've
24 got a zero foot, a 10-foot, and a 20-foot Isopach running
25 through that northwest quarter?

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1 A You have the well in Section 28 that has
2 31 feet of gross Atoka Sand. You have the well in the south-
3 east of the northeast of Section 33 that has 3 feet.

4 Q Okay.

5 A That's what establishes your Isopach inter-
6 val.

7 Q All right. As to the particular contour
8 configuration, however, to the west of there, there is no
9 additional well control. That's all I'm asking.

10 A You --

11 Q Is there -- is there any further well con-
12 trol to the west of a line between the well drilled in the
13 south half of Section 28 and the northeast quarter of Section
14 33?

15 A To the southwest of there?

16 Q To the west.

17 A This is interpretive.

18 Q Okay.

19 A I might point out that out of ten wellbores
20 here, or twelve wellbores that are indicated by the exhibit,
21 that ten were noncommercial in the Morrow.

22 Q So the Atoka is the only productive zone
23 then, I guess.

24 A Yes.

25 MR. ATKINSON: We have no further questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Cherryhomes, I would like to ask you the sequence of the drilling of these wells in here and also the productivity of the producers, or the initial tests on them.

Which was the discovery well for the Atoka reservoir here?

A The well in Section 3, the 3-1.

Q And when was this drilled?

A The first production was in September of 1978.

Q And I see a line --

A I'm sorry. The Shoe Bar 34-1 was drilled. It was the discovery well.

Q 34-1?

A The one in the south half of Section 34.

Q And when was it drilled?

A It, let's see, it potentialled in September of 1978.

Q Okay, and then after it the 3-1 was drilled?

A Yes.

Q And when was it completed?

1 A I don't have that data right -- okay, let
2 me explain this. The well, the 3-1 was completed in the
3 Morrow and it produced a small amount and then worked over to
4 the Atoka.

5 The well in 34 had the first production out
6 of the Atoka, so it would be the Atoka discovery.

7 Q Okay. And how good of a well is it in the
8 Atoka?

9 A The 34-1 or the 3-1?

10 Q Yes, sir, the 34-1?

11 A It's 2 million a day, roughly, now.

12 Q How about the 3-1? It was originally com-
13 pleted in the Morrow and then plugged back to the Atoka.

14 A Yes, sir, it produced about 45 days and I
15 don't even have a cumulative production on that in the Morrow.
16 It was worked over to the Atoka.

17 Q How good of a well is it in the Atoka, then?

18 A It's 4 million a day.

19 Q And then what was the next well drilled?

20 A The third well drilled was the well in
21 Section 28.

22 Q And it makes about 5 million a day?

23 A 4-1/2 to 5 million a day, yes, sir.

24 Q And then you drilled the 33-1.

25 A Yes, sir.

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1 Q And after you got to TD on it, you spudded
2 the 4-1.

3 A The New Mexico State 34-1, which is in the
4 north half.

5 Q The 34-1, I understand, and how good of a
6 well is it with its 4 feet of pay?

7 A That well has 14 feet, if you will look at
8 that --

9 Q Oh, okay, well I was reading that as a 4
10 then.

11 A I can see. The 1 is lined up with the
12 little dashed line there. That's 14 feet. It's 2 million a
13 day.

14 Q Now, the Morrow in the 3-1 has a green line
15 through it, indicating it's been abandoned, I guess.

16 A Yes, sir.

17 Q And the one up in the northeast northeast
18 of 34 also has a green line through it.

19 A Yes, sir, that was an old well that was
20 abandoned in 1965 in the Morrow.

21 Q Okay, I believe that's all. Thank you.

22 MR. NUTTER: Are there any other questions
23 of Mr. Cherryhomes?

24 MR. ATKINSON: We'd like to reserve the right
25 to recall Mr. Cherryhomes.

1 MR. CARR: And I would like to ask him a
2 couple questions.

3
4 REDIRECT EXAMINATION

5 BY MR. CARR:

6 Q Mr. Cherryhomes, I gather from your testi-
7 mony that you believe your interpretation of the Atoka forma-
8 tion is correct.

9 A Yes, sir.

10 Q Now, suppose that, as Mr. Atkinson suggested,
11 that a well was drilled at an unorthodox location on a unit
12 comprising the west half of Section 33, the location, in
13 fact, which we're discussing here today. What effect would
14 this have on the reserves that exist in the northeast quarter
15 of the Section 33?

16 A It would drain it.

17 Q How could you protect yourself from drain-
18 age?

19 A We could not do it, based on my interpre-
20 tation.

21 Q Would drilling an additional well there
22 protect you from drainage?

23 A No, sir.

24 Q If you drilled an additional well in the
25 northeast quarter, could you protect yourself from drainage

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1 from the well in the northwest quarter?

2 A. At an orthodox location?

3 Q. At an unorthodox location offsetting it?

4 A. You would have two wells too close together

5 Q. Do you believe that one of those wells

6 would be an unnecessary well?

7 A. Yes, sir, I do.

8 Q. Do you believe this is a prudent way to

9 develop this acreage?

10 A. The way that we have --

11 Q. With two wells?

12 A. No, I do not.

13 MR. CARR: I have nothing further.

14 MR. NUTTER: If there is nothing further,
15 the witness may be excused.

16 Did you have another witness, Mr. Carr?

17 MR. CARR: I believe that Mr. Atkinson is
18 interested in having me call -- I'd like to call Don Hunter
19 simply to answer a couple of questions and then I believe he
20 can answer the questions proposed by Mr. Atkinson.

21 MR. NUTTER: Okay, would you call him?

22 MR. CARR: Mr. Hunter has not been sworn.

23

24

(Witness sworn.)

25

DON HUNTER

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of residence?

A Don Hunter. I reside at No. 11 Linda Court in Midland.

Q Mr. Hunter, by whom are you employed and in what capacity?

A HNG Oil Company's employee in the capacity of Manager of Reservoir Engineering.

Q Have you previously testified before this Commission?

A No, I have not.

Q Would you summarize for the Examiner your educational background and your work experience?

A I received a Bachelor of Science degree in petroleum engineering from Texas Tech University in 1962 and I've worked throughout the Mid-Continent areas for major oil companies and independents, a consulting firm, and am presently employed with HNG. I was initially employed by

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1 Amoco, then Skelly, General Crude, and was with
2 and Aycock Engineering Consulting Firm for approximately three
3 years before joining HNG in March of '78.

4 Q Are you familiar with the area which is the
5 subject matter of this case?

6 A Yes, I am.

7 MR. CARR: Is the witness considered qual-
8 ified?

9 MR. NUTTER: Yes, he is.

10 Q Mr. Hunter, I believe you heard the testi-
11 mony a few moments ago and the questions by Mr. Atkinson con-
12 cerning the reserves that you anticipate now exist under the
13 south half of Section 33. Could you give us some data as to
14 what reserves you now believe exist in that area?

15 A In the south half of Section ³³ 3 I cannot
16 assign any reserves to -- to that particular portion of Sec-
17 tion 33.

18 Q These are Atoka reserves.

19 A Atoke reserves, yes.

20 Q Does that apply to both the southwest and
21 the southeast quarters?

22 A Yes, it does.

23 Q Have your figures been revised as more data
24 becomes available as you develop the pool?

25 A Yes, they have.

1 MR. CARR: I have nothing further on direct
2 from Mr. Hunter. I believe that covers what you were re-
3 questing.

4
5 CROSS EXAMINATION

6 BY MR. ATKINSON:

7 Q Mr. Hunter, you say that you presently have
8 calculated there to be no reserves in the Atoka in the south
9 half of Section 33.

10 A That is correct, yes.

11 Q All right. To what extent has that re-
12 serve estimate changed since March of 1979?

13 A That's been revised downward. We now -- I
14 now believe that essentially no undrained reserves in the
15 south half of Section 33. Existing three wells in that por-
16 tion of the reservoir should drain that particular reservoir
17 as is now mapped.

18 Q Existing three wells being which wells?

19 A The Shoe Bar 3-1, Shoe Bar 34-1, and New
20 Mexico State 34-1.

21 Q So your position is that any reserves that
22 existed beneath Section 33 have been drained by those three
23 wells?

24 A If there -- if there is any significant
25 reserves, yes. I do not assign any significant reserves to

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1 the south half of Section 33.

2 Q Okay. Now is that on the basis of drainage
3 from the three wells you just spoke about or is that on the
4 basis of the fact that Mr. Cherryhomes interpretation shows
5 that there are no Atoka Sands in the south half of Section 33?

6 A That was based on the performance of the
7 three wells that we've just mentioned in addition to the dry
8 hole drilled in Section -- north half of Section 33, the 33
9 No. 1.

10 Q So you don't consider the presence of the
11 gross Atoka Sands to be the determinate factor in determining
12 what reserves are then.

13 A No, I do not.

14 Q All right. What do you look at to determine
15 what reserves are?

16 A The permeability of the gas being one factor.
17 The gross pay, as we -- as we have it mapped, is not a net
18 pay number, and the -- this figure must be revised downward
19 based on porosity and saturation cutoffs as are developed with
20 development of the field.

21 Q Okay. So the reserve calculations that you
22 do have are gross pay, then, are gross reserves.

23 A As is shown on this map, yes, those are
24 gross. Right.

25 Q All right. Now what have you calculated

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1 for the north half of Section 33 as to estimated reserves?

2 A. At this time, if a well were drilled within
3 say six months, I could assign 2.8 Bcf.

4 Q. That's total?

5 A. Total recoverable reserves from a well
6 drilled in the north half of Section 33, yes.

7 Q. All right, will you please tell me how that
8 is distributed between the northeast quarter and northwest
9 quarter of Section 33?

10 A. Okay, the predominant portion of these re-
11 serves would be in the -- in this reservoir it is now mapped
12 in Section 28 and 31. The predominant portion of those re-
13 maining reserves to date lie in the south half of Section
14 28.

15 Q. All right. Now, as between the northeast
16 quarter and the northwest quarter of Section 33, how do you
17 allocate 2.8 Bcf recoverable reserves?

18 A. Essentially equally.

19 Q. Okay, what do you mean by essentially
20 equally?

21 A. One well drilled in the northwest portion
22 of Section 33 should, at the location specified, should drain
23 the north half of Section 33.

24 Q. All right. I'll ask you --

25 A. It's a more advantageous location based on

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1 the gross pay data that we now have, as well as what informa-
2 tion has been developed from drilling the 28 No. 1.

3 Q All right. Now, you stated earlier that
4 you estimate 2.8 Bcf of recoverable reserves in the north
5 half of Section 33.

6 A Yes.

7 Q And you are aware that the northeast
8 quarter presently is leased by HNG and the northwest quarter
9 is part of the lands leased by Exxon. That is, they're not
10 under the same ownership right now.

11 A Correct.

12 Q All right. What I'm asking you is what
13 you calculate to be the reserves in the northeast quarter of
14 Section 33.

15 A I would say probably one-third of this
16 2.8 Bcf, possibly.

17 Q So we're talking approximately, then, about
18 .93 Bcf? That's just off the top of my head.

19 A I'm speaking now based on standard loca-
20 tions.

21 Q All right. Well, Well, just so we can get
22 clear where we are now, the 2.8 Bcf you're talking about are
23 estimated recoverable reserves in the entire north half of
24 Section 33, alone.

25 A Yes.

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1 Q Without reference to Section 28 or any
2 other sections or wells in the area. All right.

3 Now, --

4 A Now that is not irrespective of Section --
5 the well in Section 28. I'm speaking of reserves that are
6 presently in place at this present time. If the well were
7 to be drilled in the north half of Section -- in the north-
8 west quarter of Section 33, within six months there would
9 be 2.8 Bcf remaining; however, this number would be revised
10 downward with prolonged wait prior to spudding of a well and
11 completion of an Atoka well in the north half of Section 33.

12 Q Now why is that?

13 A Because of the Well No. 28 is currently
14 producing at the rate of 4-1/2 million a day. The longer
15 that a location is deferred, the more likelihood would be
16 drainage of the north half of Section 33.

17 Q All right. Now, correct me if I'm not
18 saying this properly, but the present recoverable reserves
19 in place in the north half of Section 33, according to your
20 calculations, is approximately 2.8 Bcf.

21 A Yes.

22 Q All right. Now, according to your calcula-
23 tions what are the present recoverable reserves in place in
24 the northeast quarter of Section 33?

25 A Approximately one-third of that if a well

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1 were to be drilled 1980 from the north line in that northeast
2 quarter of Section 33.

3 Q Now what effect does when the well is
4 drilled have on it?

5 A It has a great effect.

6 Q All right, because of drainage from the
7 28-17

8 A Yes.

9 Q All right. So what we're talking about,
10 then, is that assuming that the well would be drilled when
11 did you say, in January of 1980?

12 A Immediately. I'd say completed by January,
13 1980, yes.

14 Q Completed by January, 1980, within the
15 next two months?

16 A Yes, that's -- the earlier the better, in
17 my opinion.

18 Q Okay. So we're talking about, then, I can
19 do this mathematically but you probably do it a lot better,
20 how many Bcf do you estimate presently in place in the north-
21 east quarter of Section 33 then? One-third of 28.1?

22 A Oh, I'd say about 900 million.

23 Q Okay. All right, and the remaining 1.8 --
24 1.9 million would be in the northwest quarter.

25 A 1.9 billion.

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1 Q Billion, I'm sorry, would be in the north-
2 west quarter, is that correct?

3 A At this time, yes.

4 Q You may not be the proper person to ask
5 this, but let me ask you specifically what the HNG's plans
6 are for drilling a well as far as timing is concerned.

7 A I'm not qualified to answer that; however,
8 I would definitely make the recommendation that a well be
9 spudded as soon as possible.

10 I am in a position to make that recommenda-
11 tion.

12 Q I just want to switch back to one point I
13 actually talked to you about earlier, I think. With regard
14 to the south half, the southeast quarter in particular, what
15 change do you have in your estimated reserves in place be-
16 tween March of '79 and the present? You said now you esti-
17 mated essentially zero. What did you estimate back in, say,
18 March of 1979 on that?

19 A I had indicated -- I did not segment that
20 out from that Section 33; however, the reservoir being
21 drained by the three wells in Sections 34 and 3, I had attri-
22 buted approximately 3 to 5 Bcf higher reserves than I now
23 can assign. The dry hole in the northeast quarter of Section
24 33, in my opinion, altered the drainable area within that
25 reservoir.

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Q Within that section?

A Within that --- no, within the particular reservoir itself.

Q All right. How much of that 3 to 5 Bcf do you think would have been --- in your opinion would have been allocated to Section 33? What kind of a change did that result in for Section 33, if you can do that?

A Oh, possibly -- possibly 1 Bcf, as much as that, maybe.

Q All right. I do have just one more question for you, Mr. Hunter. These calculations are essentially volumetric in nature, your reserve calculations?

A They were initially volumetric and they have been revised downward somewhat by BHP/Z analysis, material balance through pressure, pressure work.

MR. ATKINSON: Thank you. We have no further questions.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hunter, in response to Mr. Atkinson's question there you stated that you estimated there were 2.8 billion cubic feet of recoverable reserves in the north half of Section 33. You also stated if the well were drilled within the next six months.

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1 A. Yes, sir.

2 Q. You also stated that one third of those
3 reserves, or .9 of a billion, would come from the northeast
4 quarter of Section 33 if the well were drilled within the
5 next two months.

6 A. Yes, sir.

7 Q. Then in response to his further questioning
8 you said that the balance, the 1.9 billion cubic feet would
9 come from the northwest quarter. Would that mean that the
10 well drilled at your proposed location here would drain 1.9
11 billion from the northwest quarter or would part of that
12 drainage also come from Section 28 to the north?

13 A. There's a possibility part of that would
14 come from Section 28 to the north, yes. The well in Section
15 28 has exhibited very high deliverability, very high pay
16 quality, so that it would be hard to say that with certainty,
17 but certainly some of the gas could come from Section 28.

18 Q. But would the majority of that 1.9 billion
19 come from the northwest quarter of Section 33?

20 A. Yes, sir, in my opinion it would.

21 Q. Okay, thank you.

22 MR. NUTTER: Are there any further questions
23 of the witness?

24 MR. CARR: I have no further questions of
25 this witness. I would like to recall Mr. Parker to ask him

1 one question. We have some data that came out of cross ex-
2 amination that was not available to Mr. Parker on direct.

3 MR. NUTTER: Mr. Hunter is excused.

4
5 RAYMOND PARKER

6 being recalled as a witness and being still under oath,
7 testified as follows, to-wit:

8
9 DIRECT EXAMINATION

10 BY MR. CARR:

11 Q Mr. Parker, how soon is HNG prepared to
12 drill a well at the proposed location?

13 A We presently have Rig 38 Parker Drilling
14 that we have in a sense loaned out to another party for a
15 well that will take approximately 50 to 60 days, maybe 65
16 days to complete. The rig comes back to us and it will be
17 available for this project subject to operating agreements
18 being executed and the necessary papers.

19 Q It is fair to say that you will be prepared
20 to drill within 80 days, you anticipate that?

21 A I think we can say within 80 days we will
22 be prepared to drill a well.

23 MR. CARR: That's all I have of Mr. Parker.

24 MR. ATKINSON: I just want to clarify that.
25

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RECROSS EXAMINATION

BY MR. ATKINSON:

Q So what you're saying is that at the outside you would be -- you would actually commence drilling this is the middle of November, so you're talking about -- December, January, somewhere around the first part of February, the middle of February?

A I'd say by the middle of February.

Q All right, and how long would you anticipate for completion?

A About -- not over 50 days, 55 days.

Q Okay, so you're planning on finishing the well by April sometime?

A Yes. I think it would be before that, I'm confident. I might add that rig availability is critical. I mean it's just almost impossible to get a good rig.

MR. NUTTER: Are there any further questions of the witness? He may be excused.

Did you have anything further on direct, Mr. Carr?

At this time we'll take a fifteen minute recess.

(Thereupon a recess was taken.)

1 MR. NUTTER: The hearing will come to
2 order, please.

3 Please continue, Mr. Atkinson.
4

5 GENE AYDINIAN
6 being called as a witness and having been duly sworn upon his
7 oath, testified as follows, to-wit:
8

9 DIRECT EXAMINATION

10 BY MR. ATKINSON:

11 Q Will you please state your name and occu-
12 pation?

13 A My name is Gene Aydinian, and I'm the Dis-
14 trict Geologist of the Andrews District, Exxon Company, U.S.A.

15 MR. NUTTER: Spell your name, please.

16 A A-Y-D-I-N-I-A-N.

17 MR. NUTTER: And Gene is G-E-N-E.

18 A G-E-N-E, right.

19 Q And where do you reside?

20 A I live in Andrews, 1401 Northwest 9th Street.

21 Q And have you previously testified before
22 the Commission?

23 A No, I haven't.

24 Q And you've not had your qualifications ac-
25 cepted as a matter of record?

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1 A. No, they weren't.

2 Q. Where were you educated and what was your
3 education?

4 A. I've got a Bachelor's of Science degree at
5 the University of Notre Dame and a Master of Science degree
6 in geochemistry at California Institute of Technology.

7 Q. And who are you employed by?

8 A. Exxon Company, U.S.A.

9 Q. You said earlier that you're a district
10 geologist for Andrews District?

11 A. That's correct.

12 Q. And what area does the Andrews District
13 encompass?

14 A. Andrews District encompasses the north
15 part of the Permian Basin, Andrews County, Texas, Gaines
16 County, Texas, also south New Mexico, and Arizona, various
17 other places.

18 Q. And what do your duties consist of as Dis-
19 trict Geologist for Exxon?

20 A. I supervise four geologists who also work
21 for Exxon; have various responsibilities in the district.

22 Q. And the geologists who you supervise, are
23 they familiar and do they work within the general area that
24 is the subject of the dispute today?

25 A. Certain of the geologists do; not all of

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1 them do. Some geologists have responsibility for some of our
2 Texas fields; two geologists that I have are responsible for
3 New Mexico properties.

4 Q And are you yourself personally familiar
5 with the Section 33, Township 16 South, Range 35 East area?

6 A Yes.

7 Q And have you personally examined information
8 relating to the area subject of the dispute?

9 A Yes, I have.

10 MR. ATKINSON: Are the witness' qualifica-
11 tions acceptable?

12 MR. NUTTER: Yes, they are.

13 Q Mr. Aydinian, I hand you what has been
14 marked for identification as Exxon Exhibit Number One. Would
15 you please identify that?

16 A Exhibit Number One shows the area of the
17 Shoe Bar Ranch South, showing the production in the area with
18 the yellow -- I should say triangles, indicating Atoka pro-
19 duction; yellow triangles indicating wells which are currently
20 producing from the Atoka; hexagons indicating Morrow production;
21 triangles in hexagons, triangle enclosed in the hexagon indi-
22 cates both Atoka and Morrow production were approved, though
23 at the present time I'm not aware of any dual completions, so
24 only one of those sands would be producing; finally, the green
25 circles indicate dry holes, holes which were dry in both the

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1 Atoka and the Morrow.

2 Q Now with particular regard to the Section
3 33, what does that depict as to ownership?

4 A Okay. In Section 33 the western half is
5 colored yellow. This is the Exxon acreage, which is 320
6 acres; the eastern half is colored orange, representing the
7 communitization of HNG's northeastern quarter and also Sol
8 West's southwest quarter.

9 Q Southeast quarter, is that?

10 A I'm sorry, southeast quarter, right.

11 Q All right. Now, the Exxon acreage, to your
12 knowledge is that held under a single lease?

13 A Yes, it is.

14 Q And who is the lessor? Is it a State of
15 New Mexico lease?

16 A It's a State of New Mexico lease, that's
17 right.

18 Q Okay. Now, with regard to the box or the
19 rectangle with the dashed lines which encompasses the south-
20 east quarter of Section 33, could you explain what that is?

21 A That is the Shoe Bar Ranch Unit which was
22 formed with partners HNG, Sol West, Tom Ingram, and various
23 others.

24 Q All right, now you --- excuse me.

25 A Various other people.

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1 Q All right, now you have examined what I
2 believe was HNG Exhibit One as to the ownership and relative
3 position of the tracts and such. Would you say that they
4 substantially agree as to what they present?

5 A Yes, I would.

6 Q Now, you talk about the Atoka and the Morrow.
7 For purposes of identifying nomenclature I refer to what has
8 been marked for identification as Exxon Exhibit Two. Would
9 you explain what that is and what it relates to?

10 A Exhibit Two is a type log; just to establish
11 time it's a type log of the HNG Shoe Bar Ranch Unit 3 No. 1
12 Well. It is a gamma ray dual lateral log showing the top
13 of the Atoka at approximately 11,700 feet. I'm sorry,
14 11,970 -- I've got this wrong here. Okay, let me try one
15 more time, 12,080 feet, that's the top of the Atoka, which
16 is marked; also the top of the Morrow is shown at 12,520 feet.
17 What I will talk about is the Atoka pay in which some of the
18 following maps will show, is shown there highlighted in red
19 with the perforations in this particular well also shown, and
20 some wells in the area which have Morrow production, the Mor-
21 row pay at about 12,840 feet, shows the relative position of,
22 actual position of the Morrow pay in some of these wells did
23 differ.

24 Primarily, I will be talking about Atoka
25 from here on out, though.

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1 Q All right. Now, you heard Mr. Cherryhomes
2 testimony that the Atoka that generally exists above the top
3 of the Morrow. Would you agree with that statement?

4 A Yes, I would. In fact, if you will look
5 at it, the top of the Atoka pay that we talk about here is
6 roughly about 70 or 80 feet above the top of the Morrow.

7 Q Well now, when you talk about the Atoka
8 pay, what do you consider to be the pay zone?

9 A The pay zone is the sand unit there which
10 I think you can identify by the gamma ray curve which moves
11 out to the left and then comes back between the interval on
12 this log of 12,460 feet to 12,480 feet. An Atoka pay zone
13 would also have to have the characteristics of greater than
14 5 percent porosity. This is a minimum cutoff which I use.

15 Q Is it fair to say, then, that we're talking
16 about a net Atoka zone versus a gross Atoka Sand?

17 A Yes, I would.

18 Q All right. Now, I refer you to what has
19 been marked for identification as Exxon Exhibit Three. Will
20 you please explain what that is?

21 A This is a structure map on the top of the
22 Morrow; scale is 1-to-4000 feet. It shows the same production
23 symbols as was shown on the previous map, Atoka being shown
24 by triangles; dry holes by circles; Morrow pay by hexagons.
25 The contour interval is 50 feet. Basically what I'm depicting

Northwest Southeast

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1 here is a northeast/southwest trending anticline in the area
2 around Section 33, with the crest of the anticline being
3 approximately 8430 feet subsea.

4 Well control is shown highlighted in yellow.

5 Q All right. Now, you say this is a structural
6 map. Could you explain what this depicts? You said it was
7 a northwest/southeast trending anticline. Could you explain
8 how that relates to what we're doing here today?

9 A Well, at the present time with the limited
10 amount of wells that have been drilled in the area, I cannot
11 really say that our production in the area is controlled
12 either by structure or by stratigraphy or by a combination of
13 both. So I've made the structural map, keeping in mind that
14 this might be at some future time one of the determinative
15 factors in the reservoir, reservoiring of the gas in this
16 area.

17 Q Is it your opinion that structure may have
18 some type of correlation to the availability of hydrocarbons?

19 A It may. It may not, but it may, and I don't
20 think we can rule out that structure might not be a factor
21 here.

22 Q Would it be fair to say, then, that this
23 is just one of the factors you consider in determining what
24 is a favorable location, for example, for a well?

25 A Yes.

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1 Q All right. Now, what information did you
2 use to derive this structural map?

3 A Primarily well control and the well con-
4 trol is shown on the maps here. I have logs for all these
5 and we correlated them and came up with the top. Also
6 limited seismic was used in the area to determine the struc-
7 ture.

8 Q Okay. Was the seismic a determining fac-
9 tor in what you did here?

10 A Yeah, well, the seismic gave me the gen-
11 eral trend of the anticline; at least confirmed generally
12 the anticlinal picture that we're showing here, versus an-
13 other picture might --- would be like a uniform --- uniformly
14 dipping horizon from the southwest to the northeast. That
15 would be an alternative, and the seismic seemed to rule that
16 out.

17 Q Now I'll ask you with regard to the struc-
18 tural map, would you agree with me that this is interpretive?

19 A Yes, I would. I think it is interpretive
20 at least -- well, I should say I think it's well controlled
21 in the northeast flank and the southwest flank of the anti-
22 cline. I would say interpretive on the western flank here,
23 though you can see that there is some sort of a change in a
24 uniform contour. If we were to look at the southwest flank
25 HNG Shoe Bar Ranch Unit 3 No. 1 Well, which had a top of the

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1 Morrow at 8530 subsea and the Stanoline Well, which had a
2 top at 8601 subsea, you can see that definitely we are
3 getting higher on structure as we move to the northwest,
4 and I think that confirms the fact that those contours do
5 turn in that area from a northwest/southeast trend to a
6 northeast/southwest trend, and I have taken the liberty of
7 turning them a little further and closing off to form an
8 anticline. But I will agree, it is interpretive, in that
9 western part of the area.

10 Q Now I refer you to what has been marked
11 for identification as Exxon Exhibit Number Four and could you
12 please tell the Examiner what that is?

13 A This is a Atoka net pay map. Again, the
14 same scale, 1-to-4000 feet. The contour intervals here are
15 10 feet apart. What it shows basically here is a northeast
16 I'm sorry, a northwest/southeast trending pay zone with the
17 thin being zero to 10 feet contours running in the particular
18 section of interest, Section 33, in the northwest quarter
19 and in the southeast part of the northeast quarter. It
20 thickens on both sides from 10 to 30 feet to the northeast
21 and also from 10 to 30 feet to the southwest. Well control
22 is shown highlighted in yellow adjacent to the wells.

23 Q All right. Now you have examined the HNG
24 exhibit which is entitled gross Atoka Sand, I believe, have
25 you not?

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1 A. Right, I have.

2 Q. Now, are there -- is there well control,
3 or are there additional wells that HNG has used that do not
4 appear on your map?

5 A. There are two points on the map which are
6 significant, I think, to the problem. At least not signifi-
7 cant but are in the problem that I don't have. One is the
8 sidetrack hole that Amoco drilled from their No. 1 HC Well
9 in Section 21, which they had two feet of net; the other
10 well is the Dorchester 28 Com Well in the northeast quarter
11 of Section 28. At the time we did not have any information
12 on either of these wells at all, so they were not incorpor-
13 ated into the -- into the map as such.

14 Q. Well now, realizing that you haven't had
15 time to sit down and thoroughly contour this, what kind of
16 effect do you think this additional information would have
17 on your interpretation here?

18 A. I don't really think it would have much
19 of an effect at all. Certainly not the Amoco Well. I think
20 that's actually almost taken care of in this interpretation.

21 Q. The Amoco well is the one in the south
22 portion of Section 28?

23 A. Right, the sidetrack hole from the No. 1
24 HC. I don't think that would significantly impact this in-
25 terpretation. The Dorchester well would tend to swing the

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1 contours a little bit more to the northeast and would pull
2 that 10-foot contour down to the southwest, but I don't think
3 it would really change the trend of what we're showing here,
4 which is a thickening to the northeast with a thinning run-
5 ning across the northern part of Section 33.

6 Q Okay. Is it fair to say, then, that you
7 would sort of jog the Isopachs in the vicinity of the Section
8 28 wells slightly to the west, then? Is that what you're
9 talking about, or slightly to the east?

10 A Well, let me see. I'm not sure what you
11 mean by jog. What I would do here is I have a nose mapped
12 in Section 28 in the eastern half 30-foot thick, so to speak,
13 and I would tend to make that tighter. In other words pull
14 the northern limb of that nose, the contour which runs into
15 the northeast quarter of Section 28, I would tend to pull
16 that closer in to the HNC Well drilled in Section 28 in the
17 south half, and thus pull those other contours north of it
18 down across that well that Dorchester drilled.

19 Q Would this in any way materially change
20 the interpretation, the Isopachs in the vicinity of Section
21 33?

22 A No, I don't think it would change this
23 interpretation. I wouldn't have any problem with that at
24 all; not basically, it wouldn't really change it at all.

25 Q All right. Now, just to clarify what we're

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1 talking about here, you have Isopachs that are entitled or
2 at least marked 10, 20, and 30. What does that mean?

3 A. Okay, 10 indicates that there was 10 feet
4 of net Atoka pay in this area, net Atoka pay being again in-
5 terpreted as porosity greater than 6 percent and capable of
6 being a reservoir rock.

7 20 feet is 20 feet of reservoir pay and
8 30 feet is 30 feet of reservoir pay.

9 Q. All right.

10 A. So if we were to drill a well right on the
11 20-foot contour, we would get 20 feet of pay right at that
12 point.

13 Q. Now, I notice in the --- roughly the north ---
14 the southeast quarter of the northeast quarter where the dry
15 hole which HNG has testified to was drilled, that seems to
16 be the center of your smaller magnitude Isopach there.

17 A. That's correct.

18 Q. All right. Do you have any particular
19 geological theory or depositional theory as to what would
20 account for that little island there?

21 A. Well, the model I use here for the Atoka
22 Sand deposition is that of a braided stream rather than a
23 point bar. The difference between a braided stream is, as I
24 would interpret it, would be that a braided stream tends to
25 deposit sand in a sheet, generally a very wide sheet, so that

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1 you would get a lot of lateral sand deposition. There would
2 be isolated islands of shale or non-reservoir quality sand-
3 stone in the braided stream model, but I think that that would
4 probably be a little bit closer interpretation than a point
5 bar. A point bar would tend to deposit isolated pods of sand.
6 Again, you have a meandering river, every once in awhile a
7 meander will cut itself off and you have left there a sand
8 body which is completely surrounded by shale, isolated, of
9 limited extent; whereas, a braided stream, and this is typi-
10 cal of what you would see in the west, for instance, rivers
11 like the Platte, even there's a small one on the way down to
12 Albuquerque from here, tends to deposit sand in more of a
13 sheet fashion.

14 And I think that's -- that's the model I
15 used here in developing this picture.

16 Q All right. Now, once again I want to ask
17 you about the structural map, which I believe is our Exhibit
18 Number Three. What do you perceive to be the relationship
19 between your structural interpretation and your net pay in-
20 terpretation?

21 A There may be a relationship between them.
22 It is admittedly interpretive, but it is conceivable that at
23 the time of deposition of the sand, that the anticlinal
24 feature may have been present in some form, at least a hint
25 of it might have been there, so that the sand would tend to

1 be deposited on the flanks of the structure and not on the
2 crest of the structure as much. Of course, many things can
3 happen here, and I think probably there might have been some
4 rotation of that structure later on so that the relationship
5 is not as clear now, but given the limited amount of data
6 here, we're interpretive, there may be a relationship to it.

7 Q All right. Now, I'll ask you this: To
8 what extent is the Exxon Exhibit Number Four, the net pay
9 map, interpretive?

10 A I would say that it is interpretive in
11 the south part of Section 33 because there, like has been
12 already brought out, there is no well control in the area,
13 in the south part of 33, or for that matter, anywhere to the
14 west of the section in question, with one exception. There
15 are three wells that were drilled down to the --- and it's
16 shown on the lower righthand corner of this particular plat.

17 Q Is that the lower lefthand corner?

18 A Did I say --- yeah, lower lefthand corner.
19 The one -- two wells have interpreted Atoka pay. One would
20 be the Marathon well which was drilled in the northeast
21 quarter of Section 7. They have interpreted 58 feet of net
22 Atoka pay and it is indeed producing from the Atoka at this
23 time. Also the Mobil well drilled in the southwest quarter
24 of Section 8, which has an interpreted 12 feet of pay. I
25 used that to influence my interpretation somewhat in that

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1 there is no termination of the sand to the southwest of the
2 dry hole. Instead, in fact, I've interpreted there being
3 sand present in the south half of Section 33.

4 It is interpretive, but that is the point
5 here, with the limited well control we have, there are many
6 different interpretations which can be made.

7 Q Now, referring to your net pay Isopach here
8 in Exhibit Four, do you have an opinion as to whether the
9 total volume of gas as depicted by the net pay area in the
10 northwest quarter, is greater or less than that in the north-
11 east quarter, realizing this is a qualitative opinion?

12 A I'd say that the northwest quarter has more
13 gas reserve than the northeast quarter.

14 Q And why is that?

15 A I think it has a thicker pay section in
16 the northwest quarter, say a greater amount of thicker pay
17 section in the northwest quarter than in the northeast quar-
18 ter.

19 Q All right. And do you have an opinion on
20 the hypothetical situation where the north half of Section
21 33 would be pooled, a well drilled at the proposed HNG loca-
22 tion, and the hydrocarbons therefrom split on a 50-50 basis
23 between HNG and associates and Exxon, do you have an opinion
24 as to whether that would be an equitable division of the
25 available hydrocarbons in view of your Isopach study?

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1 A. I think it would be an inequitable distri-
2 bution. I think since the northwest quarter, that is, the
3 Exxon acreage has more reserves, I think that Exxon would not
4 be receiving its fair share of reserves, based on a north
5 half unit, proration unit.

6 Q Now what plans, or I should say what recom-
7 mendations have you made to Exxon for the development of the
8 west half of Section 33?

9 A. We've recommended drilling a well in the
10 first quarter of 1980. We have a tentative location 1980
11 feet from the north line and 660 feet from the west line of
12 Section 33.

13 Q Would that put that roughly, then, in the
14 southwest quarter of the northwest quarter?

15 A. That's correct.

16 Q Now you say that you have recommended that.
17 What action has Exxon management taken?

18 A. We presented the recommendation to Exxon
19 management and we have approval and money budgetted to drill
20 a well, tentatively scheduled for the first quarter of 1980.
21 And we're committed to drill that well.

22 Q By tentative, then, how uncertain is it or
23 how certain is it that you will drill?

24 A. It's very certain that we're going to
25 drill it.

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1 Q And what would you estimate to be the com-
2 pletion time?

3 A Depending on rig availability when we spud
4 the well, if we spud in the first quarter of 1980 the latest
5 it would probably be completed would be about May.

6 Q May of 1980?

7 A That's assuming that we spud a well in, you
8 know, the latter part of the first quarter.

9 Q All right.

10 A It probably will be sooner than that.

11 Q So that would be about six months from now,
12 then?

13 A That is correct.

14 Q All right. Referring to the gross Atoka
15 Sand map, you mentioned earlier that -- this is HNG's map --
16 we mentioned earlier that there are two data points, two
17 well control points that are here on their map that did not
18 appear on ours. Can you tell me whether the wells in the
19 southwest -- southwesternmost area of your map appear in the
20 HNG map?

21 A No, they don't.

22 Q Do you have an opinion as to whether a
23 well located in the southwest quarter of the northwest quarter
24 of Section 33, the proposed location, whether that would ef-
25 fectively tap and recover the available gas lying beneath

1 the west half of Section 33?

2 A I think that would be the best location for
3 drilling a well in the western half of Section 33 to recover
4 the reserves. That's why we chose it.

5 Q Do you have an alternative point which you
6 would choose?

7 A We could drill a well in the southwest
8 quarter 1980 feet from the south line and 660 feet from the
9 west line, but I don't think that is preferable to the loca-
10 tion that we have chosen.

11 Q What makes the southwest quarter northwest
12 quarter the most desireable point? In your opinion?

13 A Well, in my opinion, I think first of all,
14 it's high on structure as we have it interpreted. It's as
15 high on structure as you can get, and also it has not given
16 away any pay section. We'd be looking at probably about 23
17 feet of pay. Like I said before, I don't think that we can
18 make a judgment right now as to what is the controlling
19 factor, structure or stratigraphy. For this reason, there-
20 fore, we want to make sure that, you know, we try to maximize
21 our chances of getting a producing well; therefore, you want
22 to get as high on structure without giving away pay section,
23 and vice versa, you don't want to get down too far dip to
24 maximize pay, but we feel that this is the best compromise
25 position that we have.

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1 Q Now, Exxon management, you stated earlier,
2 has approved and has budgetted funds for the drilling of
3 this well.

4 A That's right.

5 Q Now, did they base their decision on the
6 information that is before the Commission today insofar as
7 the Isopachs and the structural maps are concerned?

8 A That's right. They based their decision
9 on these maps.

10 Q All right.

11 MR. NUTTER: During this lull, Mr. Aydinian,
12 the well that Exxon has budgetted I presume would go to the
13 Morrow, also, would it not?

14 A Yes, it would. We definitely want to test
15 the Morrow. I talked about the Atoka because the Atoka is
16 the main pay here, but of course, there have been three wells
17 that have had Atoka production and even though we don't see
18 it, I should say, there's potential there. We can't map it
19 in the area. We definitely want to go down and see it. We
20 would be drilling at about 13,100 feet, which I believe would
21 get us through the entire Morrow section.

22 MR. NUTTER: Mr. Carr, could you tell me
23 if the well that HNG is proposing is proposed to go to the
24 Morrow, also?

25 MR. CARR: Yes, it is.

1 MR. NUTTER: Thank you.

2 Q Just a couple of more questions. In the
3 event that the north half of Section 33 were poor, leaving
4 Exxon with the southwest quarter of Section 33, what kind of
5 limitations or restrictions would that impose on Exxon, in
6 your opinion, as to development of that southwest quarter?

7 A Well, we would be left with just a quarter
8 of the section and for us to drill a well we would have to
9 form -- we would have to approach Sol West, the leaseholder
10 of the southeast quarter of the section, and make an offer
11 to either farm out the acreage from him or to join with him
12 in a joint interest well. If we wouldn't get permission like
13 that, we would have to go through a forced pooling procedure
14 similar to what we have here. These are several red tape
15 type of hurdles. Also, I'm not sure that given that, we
16 would have the same recommendation for management to drill.
17 We've got approval to drill in the western half 100 percent
18 interest well. We'd have to go back to management again and
19 get approval to go through with all the procedures, the pro-
20 ceedings of getting the farm out or the working interest
21 ownership. We'd just have to re-evaluate it, and I don't
22 think that the locations down there are as favorable as the
23 location that we have picked here, mainly because it's closer
24 to that dry hole that HNG has drilled, recognizing that it
25 does pose some risk to the drilling in that area.

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1 Q In the event that the north half of Section
2 33 were pooled, would you as the supervising geologist recom-
3 mend to management that a well be drilled in the southwest
4 quarter?

5 A I think what I would have to do is probably
6 wait to see what the results of the ING location would be
7 before we would go ahead and recommend the location. I
8 think we would want to see the results of that well. And to
9 see if it would confirm the picture that we have here. I
10 think if we had the picture, if it did confirm the picture
11 that we have here, or did not disprove the picture which
12 I've interpreted here, I would probably go ahead and recom-
13 mend that we approach Sol West, the leaseholder of the south-
14 east quarter.

15 Q In your opinion that would require addi-
16 tional pooling and such.

17 A Yes, it would.

18 MR. ATKINSON: We have no further questions
19 at this time.

20 MR. NUTTER: Are there any questions of the
21 witness? Mr. Carr?

22

23

CROSS EXAMINATION

24

BY MR. CARR:

25

Q Mr. Aydinian, I would like to direct your

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1 attention to Exhibit Number One.

2 A. Yes.

3 Q. The yellow acreage in Section 33 represents
4 the Exxon lease, is that correct?

5 A. That's correct.

6 Q. How long has Exxon had this property under
7 lease?

8 A. I think, let me see. The next witness can
9 answer that better. I think it might be from the 1920's.

10 Q. It's been a substantial period of time.

11 A. It has been a substantial period of time,
12 yes.

13 Q. And is this held by production?

14 A. Yes, it is.

15 Q. Do you know where the producing well is
16 that's holding this lease?

17 A. The producing wells, I believe, are north
18 of the plat here in the Townsend Unit. Townsend Field.

19 Q. Now I believe you testified that you re-
20 commended to your management that a well be drilled in the
21 southwest quarter of the northwest quarter of Section 33.

22 A. That's correct.

23 Q. When was this recommendation made?

24 A. We made the recommendation -- well, we
25 first approached our management in August that we would be

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1 interested in a well here and we had final approval in the
2 second week of October.

3 Q Was this before or after you were contacted
4 by HNG?

5 A This was after we were contacted by HNG
6 that we got the final approval, to drill our well.

7 Q I believe you stated you were prepared to
8 drill in the first quarter of 1980.

9 A That's right.

10 Q When do you believe you will spud this
11 well?

12 A I would, let's see, I would think we'd
13 probably spud the well either in the month of January or
14 the first part of February. It depends on rig availability
15 and, you know, it's the same problem everybody has.

16 Q And you will be filing a C-101 with the
17 Commission requesting permission to drill sometime --

18 A I assume that's a permit to drill? Yes,
19 we will.

20 Q And you will dedicate the west half of the
21 section to that well?

22 A Yes, we would.

23 Q I'd like to now move to your Exhibit Number
24 Three and just be sure I understand your testimony on that.
25 You used seismic data to determine the basic trend of the

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1 formation was, is that correct?

2 A. That's correct.

3 Q. And based on seismic alone you certainly
4 wouldn't be recommending that a well be drilled.

5 A. Well, no, I wouldn't be. I think well con-
6 trol is the primary factor here that we're using.

7 Q. And as it now stands on the southwest of
8 the dry hole that was drilled by HNG in 33, there really has
9 been no development and everything there is interpretive.

10 A. To the southwest of HNG's --

11 Q. Dry hole.

12 A. Okay. I would think that your well control
13 in the southeast quarter of Section 33, based on the HNG
14 Section 33 No. 1 Well and the Shoe Bar Ranch well drilled in
15 the south half of Section 34. Now, when we go west of there,
16 I would say that that is interpretive, with the exception
17 that the seismic line that we had across here indicated that
18 it was an anticlinal type of feature, but it is interpretive.

19 Q. Now you indicate that to the southwest --
20 or I think now we can move to Exhibit Number Four, actually,
21 which I think is the basis of the testimony.

22 If we go -- move on this plat southwest
23 from the dry hole in Section 33, what do you base your deter-
24 mination on that you're encountering this thickness? Isn't
25 this all interpretive as you move from 10 to 20 feet to 30

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1 feet?

2 A I think it's an interpretation based on
3 the analysis from the data that I have.

4 Q What data?

5 A The well control data which is shown on
6 the map.

7 Q Okay, so the well control data actually to
8 the north -- well, to the -- to the east of the dry hole and
9 to the north of the dry hole is what you're using to base
10 your interpretation to the south and west of the dry hole.

11 A Also the two data points down to the south-
12 west of the dry hole.

13 Q Do you generally base your conclusions on
14 data on wells that are this far distant from the subject
15 area?

16 A It all depends on what I'm looking at
17 here. This particular case, and I think everybody will recog-
18 nize that it is an interpretation, I think that given a choice
19 between drawing a zero contour, let's say in the position
20 where I have my 20-foot contour, and which is similar to the
21 HNG interpretation, and given the alternate interpretation
22 which I have of putting sand there, I would think that I
23 would have to give the nod to this interpretation here, be-
24 cause there is indications of sand to the southwest.

25 Q When were the wells down in the southwest

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1 drilled in Sections 7 and 8?

2 A I believe -- I don't have the exact dates.
3 They were several years -- 1970's, I think, the early part
4 of the 70's. They're about five years old.

5 Q Do you have any data on those wells that
6 would suggest that any well should have been drilled to the
7 north and east of those?

8 A I've got to wonder why nobody has drilled
9 to the north and east of them. We have data to indicate that
10 they are very good wells.

11 Q But that for some reason no one has in-
12 ferred from those production --

13 MR. ATKINSON: I'm going to object. I
14 think that he's testified that he doesn't have any idea of
15 why people haven't, and unless Mr. Carr can demonstrate
16 there is some hookup with Exxon, some great reason why Exxon
17 has not drilled in that area, then I don't think it's very
18 relevant.

19 MR. CARR: I believe he's testified some
20 of his inferences are based on two Atoka wells on the south-
21 west corner of this plat, and I think that based on that,
22 we're certainly entitled to cross examine him on what -- why
23 there has been no development in that area if these wells are
24 so good that you can infer from them.

25 MR. NUTTER: Well, I -- as far as my own

1 interpretation of the data so far, I'm not going to pay any
2 attention to those wells down there in the southwest, because
3 you've got a 58-foot and a 12-foot less than a mile apart
4 and I don't think they have any bearing on this structure up
5 here.

6 MR. CARR: Thank you, Mr. Nutter.

7 Q I believe on your plat, and correct me if
8 this is wrong, on your plat there is a well in Section 28 in
9 the northeast quarter in the Edison Lease, I believe you
10 said there were 6 feet of net pay in that well.

11 A I didn't state that. I think your map
12 shows that there is 6 feet but we do not have a log and I
13 have not personally examined the well, and I don't really
14 know what is in that.

15 Q Would that 6 feet support your conclusion?

16 A I wouldn't say that it supported my conclu-
17 sion, either. I'd have to take a look at it before I could
18 make that inference.

19 Q Didn't you in fact indicate that there were
20 28 feet of pay in that well?

21 A No, I didn't. That's deception, if I'm not
22 mistaken.

23 Q All right. All right.

24 A 28. Oh, I think I see what you're saying.

25 Q Based on your contour lines.

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1 A. Okay, now before -- I had not gotten the
2 information. Not knowing the information I would have in-
3 ferred that that would have had about 28 or 29 feet of net
4 pay in it; however, given the fact that there is an indication
5 that it might be less than that, the contours could be altered
6 to accommodate that data and I do not think seriously impair
7 this particular interpretation.

8 Q Now you're interpreting what we have here
9 as a braided stream.

10 A. That's correct.

11 Q If you're dealing with a braided stream
12 would you be more likely to anticipate wells being drilled
13 along the stream bed and having commercial producers following
14 a trend than you would if you were dealing with a bar point
15 type formation?

16 A Well now what do you mean by a trend?
17 Would you explain that?

18 Q Well, let me ask you this: Does a braided
19 stream sort of a deposit, a braided stream, does that tend
20 to result in isolated pods of sand, as you have indicated
21 you believe a point bar deposit --

22 A I would say no.

23 Q Isn't it possible from just where we have
24 producing wells in this area that we have an isolated pod
25 of sand in Section 34 and 3; that you have another one in

1 the south half of 28, the north half of 33, and perhaps
2 another in 21? Isn't that a possible interpretation of those?

3 A It's as possible as having a shale -a deposit
4 of shale, too.

5 Q Mr. Aydenian, if a well was drilled in the
6 west half of this section dedicated to it -- let me strike
7 that. In your opinion are there any reserves under the north-
8 east quarter of Section 33?

9 A The northeast quarter of Section 33? Yes,
10 I'd say there were.

11 Q If a well was drilled in the west half of
12 Section 33 and the west half was dedicated to it, do you be-
13 lieve it would drain the northeast quarter of that section?

14 A Of Section 33?

15 Q Yes.

16 A Depending on how extensive the reservoir
17 was in there, I would say that it would.

18 Q Do you know of any way for HNG to produce
19 those reserves other than drilling another well in that
20 quarter section?

21 A They could possibly produce the reserves
22 from the well in the south half of Section 28.

23 Q Would they -- but would the interest owners
24 because of their interest ownership in the northeast quarter
25 of Section 33 derive any benefit from those?

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1 A. No, I would say they wouldn't because you
2 have different interest owners in the northeast quarter than
3 you have in -- northeast quarter of Section 3 than you have
4 in Section 28.

5 Q Do you believe that it would be prudent to
6 drill another well in the northeast quarter of Section 33?

7 A. My recommendation, if I were working for
8 HNG, which I am not, my recommendation would be that I would
9 look at, if I had my interpretation here and I were recom-
10 mending it to HNG management, I would recommend the drilling
11 of another well in the western half of Section 33. I would
12 drill it either in the northeast quarter, let's say the
13 northwest quarter of the northeast quarter, or probably more
14 preferable, I would drill it in the southeast quarter of
15 Section 33.

16 Q You would recommend drilling a well in the
17 southeast quarter?

18 A. Of Section 33, that's correct.

19 Q Now if you drilled a well offsetting in
20 the northeast quarter of Section 33, wouldn't you be drilling
21 in close proximity to the well in the south half of 28?
22 Of necessity?

23 A. You would want to drill this again where?
24 What part of the northeast quarter?

25 Q I believe you suggested you would recommend

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1 drilling in the, and correct me if this is wrong, in the
2 northwest of the northeast. Did you say that?

3 A Yeah, I probably -- I would, that's what
4 I said and that's where I'd recommend drilling.

5 Q Would you derive as effective a drainage
6 pattern from a well located there as from the proposed loca-
7 tion?

8 A I think that you would probably get as much
9 interference from that well across the lease line in Section
10 28 in that northwest quarter of the northeast quarter of
11 Section 33 as you would from the well which you have proposed
12 in the northeast quarter of the northwest quarter of Section
13 33.

14 Q So you believe, in fact, the well in Sec-
15 tion 28 is draining the acreage in the northeast quarter of
16 the northwest quarter, is that correct?

17 A I don't believe that it is. I don't know
18 if it is. I believe that it could be draining the acreage
19 in the north half of Section 33, and I think the engineer
20 testified to that fact, too.

21 Q Then conversely, a well drilled at the
22 proposed location would drain acreage in Section 28, is that
23 not correct?

24 A I think that's possible.

25 Q So part of the production in that well would

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1 in fact come from Section 28.

2 A I think it's possible. I don't know that
3 it would. There are a lot of things that we just don't know.

4 Q All right. I believe you said your recom-
5 mendation to management was to drill -- maybe you'd better
6 tell me where you recommended that the well be drilled in the
7 west half.

8 A Okay, we recommended and we have tenta-
9 tive approval to drill -- I shouldn't say tentative. We
10 have recommended a tentative location and have approval to
11 drill 1980 feet from the north line and 660 feet from the
12 west line.

13 Q And you felt there you were high on the
14 structure and you also what, there were two reasons.

15 A Okay. Well, let me put it this way, I
16 think will be explain it. You can be high on the structure
17 and have a minimum of net pay or you can be all the way down
18 on the flanks of the structure and have a maximum net pay.
19 What I try to do is optimize that to be as high on the struc-
20 ture as possible without adversely giving away an adverse
21 amount of net pay section, because it appears that the net
22 pay might have an influence on the rate of production. So
23 this particular location, I think is the best location in the
24 fact that it would optimize the position on structure and at
25 the same time give you a respectable amount of net pay.

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1 Q Wouldn't you be able to drill a well based
2 on your contours here in the southwest quarter that would be
3 a similar position in terms of structure and net pay?

4 A Yes, you could possibly drill a well in the
5 southwest quarter but I have a preference between drilling
6 there and drilling where we have recommended and I prefer
7 and have recommended that we drill in the northwest quarter.
8 I think that's optimal, given a choice between the two. It's
9 purely an opinion.

10 Q Looking at your Isopach, wouldn't you in
11 fact have more net pay in the southwest quarter?

12 A Where would you specifically point to?

13 Q Well, aren't there locations, standard
14 locations in the southwest quarter where you could obtain
15 more feet of net pay? I would say 1980 --

16 A Okay, what would you define as your unit
17 that you would say is a standard location, you mean --

18 Q In the west half; in the west half, that's
19 what we're talking about.

20 A Okay, you have one location. Let's say
21 you've got four possible locations.

22 Q Right.

23 A Okay. The location in the southeast
24 quarter of the northwest quarter you have less net pay.
25 Throw that one out.

1 The location in the northeast quarter of
2 the southwest quarter you have the same amount of net pay,
3 so it's equal, and I think I like the one in the northwest
4 quarter, given the choice between the two.

5 Finally, you have a location in the north-
6 west quarter of the southeast quarter and you are on a low --
7 you would get more net pay but you are on a lower position
8 structurally.

9 MR. CARR: I have nothing further on
10 cross.

11 MR. NUTTER: Do you have any redirect, Mr.
12 Atkinson?

13 MR. ATKINSON: No, we don't. Thank you.

14 MR. NUTTER: Does anyone have any questions?
15 The witness may be excused.

16 MR. ATKINSON: We'll call our next witness,
17 please.

18
19 J. K. LYTTLE
20 being called as a witness and having been duly sworn upon his
21 oath, testified as follows, to-wit:

22
23 DIRECT EXAMINATION

24 BY MR. ATKINSON:

25 Q Could you please state your name?

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1 A. My name is J. K. Lytle.

2 Q. And where do you reside, Mr. Lytle?

3 A. In Midland, Texas.

4 Q. And by whom are you employed?

5 A. Exxon Company, U.S.A.

6 Q. And how long have you been employed by

7 Exxon?

8 A. About thirty-one years.

9 Q. And what is your capacity with Exxon?

10 A. I'm an engineer in the production depart-
11 ment.

12 Q. And have you previously testified before
13 the Commission and had your qualifications accepted as a
14 matter of record?

15 A. Yes, I have.

16 MR. ATKINSON: Are the witness' qualifi-
17 cations accepted?

18 MR. NUTTER: Yes, they are.

19 Q. Mr. Lytle, are you familiar with the sec-
20 tion which is in dispute here today between HNG and Exxon?

21 A. Yes, sir.

22 Q. And have you performed any studies or made
23 a study of the area?

24 A. Yes, I have.

25 Q. And have you arrived at any recommendations

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1 based on the information you have viewed?

2 A Well, I have studied the completion and
3 performance of the wells in the area, looked at scout tickets,
4 reviewed the interpretation by our geologist, and would you
5 be more specific in asking about a recommendation?

6 Q All right. As to -- well, you've told us
7 the information you've relied upon, and forming the opinions
8 that you have. Have you made any studies as to volumes of
9 hydrocarbons beneath the north half of Section 33?

10 A Yes, I have made a volumetric calculation
11 of the hydrocarbons which I believe would be recoverable
12 under the north half of Section 33.

13 Q And have you broken down that analysis into
14 a northeast quarter and northwest quarter of Section 33?

15 A Yes. The calculation indicated that the
16 recoverable reserve under the northeast quarter would be
17 1.5 Bcf of gas plus a small amount of liquids, condensate,
18 and under the northwest quarter of Section 33 1.8 Bcf of gas.
19 Plus liquids.

20 Q And are you talking about recoverable re-
21 serves?

22 A Yes, that's using an 80 percent recovery
23 factor of the gas in place.

24 Q Now, we're taking about 1.8 Bcf in the
25 northwest quarter and 1.5 in the northeast quarter. Have

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1 you calculated what the difference is between those two
2 figures?

3 A. The difference would be 300 million cubic
4 feet of gas.

5 Q And which of Exxon or HNG would own more
6 of this gas?

7 A. Well, Exxon would be contributing the addi-
8 tional 300 million cubic feet to the proposed unit.

9 Q Now in your capacity as a production
10 staff engineer, have you become aware or have you had occa-
11 sion to deal with current market prices for new gas?

12 A. The market price for new gas for a well
13 drilled here would be slightly in excess of \$2.00 per Mcf.

14 Q And that's an approximate figure, I take
15 it?

16 A. Yes.

17 Q Now, applying that \$2.00 per Mcf figure
18 to the 300 million foot difference, what sort of dollar
19 difference does that make?

20 A. You come up with a difference of \$600,000.

21 Q Now in the event that the north half were
22 pooled and that a well were drilled in the northeast quarter
23 of the northwest quarter as proposed by HNG, and in the
24 event that the hydrocarbons were split equally between --
25 that the hydrocarbons produced were split equally between

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1 Exxon and HNG, do you have an opinion as to whether this
2 would be an equitable distribution of hydrocarbons?

3 A. No, I believe it would be inequitable
4 because of the Exxon quarter would be contributing more gas
5 and therefore more value and with only 50 percent of the
6 well, the inequity would be in the neighborhood of \$300,000
7 to the detriment of Exxon.

8 Q. Okay. Now you heard earlier testimony as
9 to what a reasonable risk factor would be and I believe you
10 heard testimony that 200 percent was probably a reasonable
11 risk factor. Do you have an opinion as to whether that is
12 a reasonable risk factor?

13 A. I don't think that would be reasonable.
14 I think it would be way too high and my recommendation would
15 be that if this forced pooling proposal is approved and a
16 well drilled in the location that HNG proposes, which would
17 be very close to an existing producer, that a much more
18 reasonable penalty would be no greater than 50 percent.

19 MR. ATKINSON: We have no further questions.

20 MR. NUTTER: Any further questions of the
21 witness?

22 MR. CARR: Yeah, I have just a couple of
23 very brief ones.
24
25

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Lytle, are you familiar with the well that HNG has completed in Section 28 immediately north of the unit we're now talking about?

A To the extent that I know when it was completed and the initial potential and the producing rate.

Q If a well is not drilled in the next six months in Section 33, do you believe that acreage would be drained?

A Which acreage?

Q The acreage in 33, being the north half of 33?

A Yes. If there's no well drilled to offset the well in Section 28 somewhere in Section 33, well, then the drainage area for Section 28, as close as it is to Section 33, I think would have to include some portion of Section 33.

Q If a well is drilled at HNG's proposed location in the north half, do you believe that that would drain part of the acreage in Section -- in the south half of Section 28?

A If a well is drilled in Section 33 at the location which HNG is proposing?

Q Uh-huh.

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1 A I suppose that part of its drainage area
2 could come from Section 28. I think, however, that predo-
3 minately it would come from Section 33.

4 Q As to any production that would come from
5 Section 28, would Exxon be entitled to 50 percent of the
6 proceeds from that production?

7 A If the proposed unit is formed Exxon will
8 get its share of the well's production, and beyond that, I
9 can't say where it would come from.

10 Q If a west half unit is created and a well
11 drilled by Exxon in the northwest quarter, and then HNG has
12 to protect its rights and drill a well in the northeast
13 quarter of 33, do you believe all those wells are necessary
14 to produce actually the hydrocarbons that are under the
15 north half of that section? Or would the two wells, your
16 well that you're proposing in the west half and the well in
17 28 actually eventually produce the reserves?

18 A Well, I believe that based on our inter-
19 pretation that the two wells in Section 33 would be neces-
20 sary to produce the hydrocarbons under Section 33, or the
21 equivalent amount.

22 Q Based on your understanding of the area,
23 absent the drilling of a well in the northeast quarter of
24 33, assuming you drill in the northwest quarter, do you be-
25 lieve that well would be necessary or there would be hydro-

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1 carbons that would be left in the ground? Is that your
2 testimony?

3 A I don't understand that question. Would
4 you rephrase it?

5 Q I'll try. If a well is drilled by Exxon
6 in the northwest quarter and no other well is drilled in
7 Section 33, do you believe that hydrocarbons would be left
8 in the ground that could be recovered by the drilling of a
9 well in the northeast quarter?

10 A Yes.

11 MR. CARR: I have nothing further on
12 cross.

13 MR. NUTTER: Are there any questions of
14 Mr. Lytle?

15 MR. ATKINSON: I do have just one question
16 on redirect.

17 MR. NUTTER: Go ahead.

18
19 REDIRECT EXAMINATION

20 BY MR. ATKINSON:

21 Q As to the hydrocarbons that would be left
22 in the ground if there were a well drilled in the northeast
23 quarter of the northwest quarter -- I'm sorry, if the well
24 was drilled in Exxon's proposed location as compared with
25 the location proposed by HNG, are those hydrocarbons pre-

1 dominantly in the northeast quarter of Section 33 that would
2 be left in the ground?

3 A. I'd think the chances of it would be --
4 would be there.

5 Q That would be HNG's property, then.

6 A. Yes.

7 MR. ATKINSON: That's all we have.

8 MR. NUTTER: Are there any further questions?

9 The witness may be excused.

10 Did you have any further direct testimony,
11 Mr. Atkinson?

12 MR. ATKINSON: No, sir, we sure don't.

13 MR. NUTTER: Mr. Carr, I wanted to ask one
14 of your witnesses, I don't know which one to direct it to,
15 about this No. 33-1. Has it made any gas and what the com-
16 pletion attempts were in the Atoka.

17 MR. CARR: Mr. Cherryhomes can testify to
18 that.

19 MR. CHERRYHOMES: Yes, sir, we perforated
20 the Atoka, 3 feet of Atoka pay, and it -- for one day it made
21 150 Mcf of gas. Based on this information we fraced the well
22 and lost all production. We produced no gas after the frac.
23 It looks like it's on the edge of the reservoir.

24 MR. NUTTER: Thank you.

25 So that completes both of your direct cases,

1 right?

2 MR. CARR: Yes, sir.

3 MR. NUTTER: Okay, at this time we'll call
4 for -- does anyone have anything they wish to offer in the
5 case, any further testimony?

6 We'll call for statements at this time
7 and Mr. Carr as applicant, you may go last, if you wish.

8 MR. ATKINSON: If I could, I'd like to
9 move to introduce Exxon's Exhibits One through Four. I
10 guess I'd better do that.

11 MR. NUTTER: Exxon's Exhibits One through
12 Four will be admitted in evidence.

13 MR. ATKINSON: I think it's very clear to
14 you, Mr. Nutter, that this boils down to some kind of
15 shouting match between the Exxon and HNG geologists as to
16 how the limited data should be construed.

17 I think that under either interpretation
18 it is clear that Exxon is being treated inequitably if the
19 north half is pooled.

20 Now there are two cases we can go with.
21 One is the case proposed by HNG. HNG's own engineers have
22 admitted that -- own engineer has admitted that there is
23 approximately 1.9 Bcf under their interpretation contained
24 in the northwest quarter of Section 33 and .9 in the north-
25 east quarter of Section 33. Now that's a difference of 1 BCF.

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1 That clearly is a very substantial inequity, which is accrued
2 to Exxon because of that is going to be going to HNG under
3 any kind of forced pooling arrangement.

4 Now, HNG has suggested that maybe that's
5 okay; maybe it's all right because the south half of Section
6 28 is going to be drained and that's HNG property and Exxon
7 gets half of that so that makes all just fine.

8 But the problem is, they have not had
9 any testimony quantitatively whatsoever by their own people
10 about how much of the south half of Section 28 is going to
11 actually contribute to any production from the northeast
12 quarter of the northwest quarter. They have made some
13 qualitative baldfaced statement about, well, it may drain
14 part of Section 28, and might, but they sure have not
15 shown that it's going to contribute an additional Bcf to
16 Exxon, to Exxon's share in that, and even if it did, that's
17 irrelevant.

18 Now, the other, the alternative interpre-
19 tation, Exxon's interpretation, clearly shows by our testi-
20 mony that there is an additional 300 million cubic foot
21 difference in the northwest and the northeast and that
22 position is not quite as inequitable to Exxon as the HNG's
23 engineer's testimony indicates that it could be; neverthe-
24 less, we're talking about \$600,000. We're talking about
25 half of that going to HNG which should rightfully belong

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1 to Exxon; that's \$300,000, and I submit that in either
2 event Exxon's correlative rights are not being protected
3 by force pooling the north half.

4 Now there's something else that -- almost
5 an equitable matter, I would ask the Commission to consi-
6 der and that is Exxon has a lease in the west half of Sec-
7 tion 33. Admittedly it has not been drilled but this area
8 is just now being developed by anyone in the last four or
9 five years, as you're aware from your records of the area.
10 As a consequence, I don't think it has any bearing on the
11 fact whatsoever that Exxon hasn't done anything since the
12 1920's on this section. They intend to and they have plans
13 for and they are committed to drill on the west half of
14 Section 33 within a six month time period that HNG has
15 proposed for its own drilling plan.

16 Now HNG has already gotten into a unit
17 agreement with Sol West. I don't know why they did that
18 in view of the fact that their engineer testified there
19 is nothing down there. I'm not sure why they would think
20 that was such a favorable situation for HNG to be in, but
21 they did it nonetheless. I would submit that the status
22 quo is that the east half of Section 33 is in a unit,
23 is in a unitized unit between Sol West and HNG and that's
24 all hunky dory. I would submit that the west half is
25 owned by Exxon and Exxon is planning to develop it and

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1 I see no reason why Exxon should be put in the position
2 that in the southwest quarter that is strung out all by
3 itself down there, would put Exxon in the position of
4 having to go, having to approach Sol West about maybe some
5 sort of pooling agreement between the two of them or put
6 Exxon in the situation where Sol West becomes -- comes
7 before this Commission in a year or in two years and says,
8 well, I'm going to force pool Exxon's southwest quarter.
9 Now if that's not inequity, I don't know what is. It's
10 inequity twice over, and for that reason we submit that
11 Exxon's correlative rights are not being protected and
12 submit that nothing proposed by HNG is going to prevent
13 the drilling of unnecessary wells, and I see no evidence
14 demonstrating that this is going to prevent waste.

15 MR. NUTTER: Thank you. Mr. Carr?

16 MR. CARR: Mr. Nutter, we submit that
17 a careful review of the evidence will show that when we look
18 at the Atoka formation in this area and you attempt to drill
19 a commercial well, you need to drill as far north in Section
20 33 as you possibly can.

21 Another thing you have to consider is an
22 effective drainage pattern for the acreage involved, and to
23 do so you have to move away as far as you can from the well
24 drilled in Section 28, and for that reason HNG has proposed
25 drilling a well at the location they are proposing to you

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1 in this application.

2 Now we submit the characteristics of the
3 Atoka in this area, when the evidence is reviewed, really
4 show that neither party has 160 productive acres in the
5 north half of Section 33. Now we admit that there's nothing
6 wrong with Exxon holding a lease for thirty years but we
7 would also point out that their response and their determined
8 decision to do something was in response to the plan of HNG.

9 Now we've heard a lot of talk about what
10 are the equities but when we look at those I think it's im-
11 portant to remember that Exxon, if the application is granted,
12 will be entitled to half of the production from the northwest
13 quarter, to half the production from the northeast quarter,
14 and to half whatever is produced from the acreage underneath
15 the south half of Section 28. This is not a situation where
16 and the application isn't the kind of an application where
17 you are called upon to try and determine the number of pro-
18 ductive acres and then devise some sort of a formula, and I
19 submit that we have drifted away from really the point of
20 the whole hearing, and I think it's essential, therefore,
21 just in closing to bring this thing back into focus and look
22 at the statute under which this application is brought.

23 It's Section 72-17, sub-paragraph C, and
24 the relevant sentence reads: "Where such owner, or owners,
25 have not agreed to pool their interest", that's what we

1 have here, "and where one such separate owners, or owners,
2 who has the right to drill has drilled or proposes to drill
3 a well on the unit," that's what we have here at HNG's pro-
4 posal, "to a common source of supply," the Atoka, "the Division
5 to avoid the drilling of unnecessary wells," and we submit
6 the record clearly shows two wells in the north half of 33
7 are not warranted, "the division, to avoid the drilling of
8 unnecessary wells, or to protect correlative rights, or to
9 prevent waste, shall pool all or any part of such lands."
10 Shall.

11
12 Once you comply with these requisites, we
13 submit that it isn't discretionary, that it isn't something
14 in which the Commission is asked to weigh all the equities,
15 but once the three conditions are met, you are entitled to
16 an order. HNG stands before you having met all these re-
17 quirements. We submit we are entitled to the order and we
18 ask that the application be granted.

19 MR. NUTTER: Thank you, Mr. Carr.

20 Is there anything further in this Case
21 Number 6709?

22 We'll take the case under advisement and
23 the hearing is adjourned.

24
25 (Hearing concluded.)

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REPORTER CERTIFICATE

I, SALLY W. BOYD, a Certified Shorthand Reporter,
DO HEREBY CERTIFY THAT the foregoing and attached Transcript
of Hearing before the Oil Conservation Division was reported
by me; that the said transcript is a full, true, and correct
record of the hearing, prepared by me to the best of my
ability from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 6709
heard by me on 11/14, 1979.
[Signature], Examiner
Oil Conservation Division

SALLY WALTON BOYD
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August 16, 1979

Exxon Company U.S.A.
P. O. Box 1600
Midland, Texas 79702
Attn: John
Joe B. Thomas

RE: Proposed Joint Venture
South Shoebar Field Area
Lea County, New Mexico

Gentlemen:

HNG Oil Company and Associates are the owners of a State of New Mexico Oil and Gas Lease covering the NE/4 of Section 33, T-16-S, R-35-E, Lea County, New Mexico. According to our records Exxon Company U.S.A. is the owner of an oil and gas lease covering, among other lands, the NW/4 of said Section 33.

HNG Oil Company proposes the formation of a 320 acre working interest unit comprised of the N/2 of said Section 33 for the drilling of a 13,000 foot Morrow test well to be located 1980' FWL and 660' FNL of Section 33.

Working interests of the parties would be as follows:

<u>Company</u>	<u>Acres</u>	<u>Percentage</u>
HNG Oil Company & Associates	160	50%
Exxon Company U.S.A.	160	50%
	320	100%

The attached AFE shows the cost of a dry hole to be \$729,713.00 and the cost of a completed well to be \$1,057,623.00.

You are invited to participate in this proposed venture as a working interest owner or in lieu thereof farmout your interest to the unit reserving a 1/16th of 8/8ths overriding royalty convertible to a 50% working interest upon payout of the test well, both proportionately reduced.

Your early consideration and reply to this proposal will be appreciated.

Yours very truly,

HNG OIL COMPANY

Raymond Parker
Raymond Parker
Manager of Lands

RP/jw
encl.

BEFORE EXAMINED MUTTER
OIL CONSERVATION DIVISION
HNG EXHIBIT NO. 2
CASE NO. 6709

DRILLING AFE



AFE NO.

SE. NO.

HNG W I

AFE AMOUNT

HNG EST. COST

AFE DATE

- ☐ WILDCAT
☐ DRILLING
☐ COMPLETION
☐ RE-ENTRY
- ☒ DEVELOPMENT
☒ DRILLING
☒ COMPLETION
☐ RE-ENTRY
- ☐ INJECTION
☐ DRILLING
☐ COMPLETION
☐ RE-ENTRY

LEASE & WELL NO.	New Mexico State "33" Com #2	DEPTH & FORM	13,000 Morrow
LOCATION	1980' FWL & 660' FNL, Sec. 33, T16S, R35E		
COUNTY & STATE	Lea County, New Mexico	FIELD	
OPERATOR	HNG Oil Company	SPUD DATE	

INTANGIBLE WELL COST				
CODE	DESCRIPTION	DRILLING	COMPLETION	TOTAL
5501	Access, Location & Roads	40,000		40,000
5502	Rig Move	65,000		65,000
5503	Footage Cost			
5504	Day Work Cost 45 days @ 46.50	209,250		209,250
5505	Bits & Reamers	31,500		31,500
5506	Fuel	27,000	4,200	31,200
5507	Water	4,000		4,000
5508	Mud & Chemicals	40,000	5,000	45,000
5509	Cementing & Service	25,000	9,000	34,000
5510	Coring			
5511	Surveying & Testing	35,000		35,000
5512	Mud Logging	14,800		14,800
5513	Perforating		7,000	7,000
5514	Stimulation		20,000	20,000
5515	Transportation	6,000	6,000	12,000
5516	Drilling Overhead & Supervision	6,750	1,050	7,800
5517	Equipment Rental	22,500	12,500	35,000
5518	Completion Rig 7 days @ 46.50		32,550	32,550
5519	Other Drilling Expense	25,000		25,000
5522	Directional Drilling			
	Contingencies (10% of Intangible)	55,180	9,730	64,910
	TOTAL INTANGIBLES	606,980	107,030	714,010

TANGIBLE WELL COST				
5101	40' Of 20" Conductor Casing	1,750		1,750
5102	450' Of 13-3/8" Surface Casing	7,650		7,650
5103	4900' Of 9-5/8" Intermediate Casing	87,175		87,175
5103	' Of " Intermediate Casing			
5103	' Of " Intermediate Casing			
5104	13000' Of 4-1/2" Production Casing		93,250	93,250
5104	' Of 5-1/2" Tie-Back Casing			
5105	11500' Of 2-7/8" Tubing		48,550	48,550
5105	' Of " Tubing			
5119	Liner Equipment			
5106	Well Head Equipment	15,000	25,000	40,000
5107	Tanks		8,000	8,000
5108	Flow Lines		500	500
5109	Valves & Fittings		2,000	2,000
5110	Rods			
5111	Pumping Equipment-Surface			
5112	Production Equipment-Subsurface			
5113	Engines & Motors			
	(Continued on back of AFE)			

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION

EXHIBIT NO. 3

HNG OIL COMPANY APPROVAL							
By	Date	By	Date	By	Date	By	Date

JOINT OPERATOR APPROVAL

Firm _____ By _____ Title _____ Date _____

TANGIBLE WELL COST (Continued)				
		DRILLING	COMPLETION	TOTAL
5114	Heater-Treater & Separators		20,000	20,000
5115	Other Equipment			
5116	Buildings			
5117	Metering Equipment		500	500
5118	Non-Controllable Equipment			
5120	Supervision			
5121	Construction Cost		3,000	3,000
	Contingencies (10% of Tangible)	11,158	20,080	31,238
	Total Tangibles	122,733	220,880	343,613
	Total Well Cost	729,713	327,910	1,057,623

EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702 • (915) 684-4411

September 25, 1979

Re: Proposed
HNG New Mexico State "33" Com #2
1980' FWL and 660' FNL
Section 33-16S-35E
Lea County, New Mexico

HNG Oil Company
P. O. Box 2267
Midland, TX 79702

Attn: Mr. Raymond Parker
Manager of Lands

Gentlemen:

Your proposal regarding the above captioned well as contained in your letter of August 16, 1979, has been considered. It is the purpose of this letter to advise you that we do not desire to either join or farmout in accordance with your request at this time.

Yours very truly,

Marvin L. Wigley
Marvin L. Wigley, Supervisor
LAND-UNITIZATION

MLW:lpj

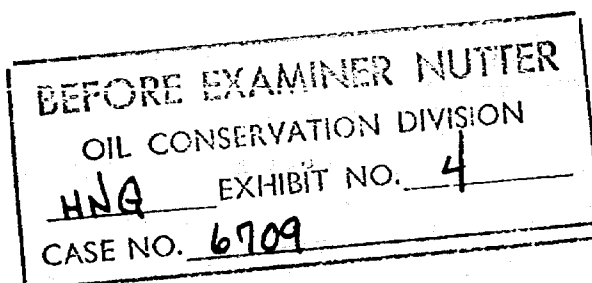


EXHIBIT " "

Attached to and made a part of

ACCOUNTING PROCEDURE CONSERVATION DIVISION
JOINT OPERATIONS HNG EXHIBIT NO. 5

CASE NO. 6709

I. GENERAL PROVISIONS

1. Definitions

"Joint Property" shall mean the real and personal property subject to the agreement to which this Accounting Procedure is attached.

"Joint Operations" shall mean all operations necessary or proper for the development, operation, protection and maintenance of the Joint Property.

"Joint Account" shall mean the account showing the charges paid and credits received in the conduct of the Joint Operations and which are to be shared by the Parties.

"Operator" shall mean the party designated to conduct the Joint Operations.

"Non-Operators" shall mean the parties to this agreement other than the Operator.

"Parties" shall mean Operator and Non-Operators.

"First Level Supervisors" shall mean those employees whose primary function in Joint Operations is the direct supervision of other employees and/or contract labor directly employed on the Joint Property in a field operating capacity.

"Technical Employees" shall mean those employees having special and specific engineering, geological or other professional skills, and whose primary function in Joint Operations is the handling of specific operating conditions and problems for the benefit of the Joint Property.

"Personal Expenses" shall mean travel and other reasonable reimbursable expenses of Operator's employees.

"Material" shall mean personal property, equipment or supplies acquired or held for use on the Joint Property.

"Controllable Material" shall mean Material which at the time is so classified in the Material Classification Manual as most recently recommended by the Council of Petroleum Accountants Societies of North America.

2. Statement and Billings

Operator shall bill Non-Operators on or before the last day of each month for their proportionate share of the Joint Account for the preceding month. Such bills will be accompanied by statements which identify the authority for expenditure, lease or facility, and all charges and credits, summarized by appropriate classifications of investment and expense except that items of Controllable Material and unusual charges and credits shall be separately identified and fully described in detail.

3. Advances and Payments by Non-Operators

Unless otherwise provided for in the agreement, the Operator may require the Non-Operators to advance their share of estimated cash outlay for the succeeding month's operation. Operator shall adjust each monthly billing to reflect advances received from the Non-Operators.

Each Non-Operator shall pay its proportion of all bills within fifteen (15) days after receipt. If payment is not made within such time, the unpaid balance shall bear interest monthly at the rate of twelve percent (12%) per annum or the maximum contract rate permitted by the applicable usury laws in the state in which the Joint Property is located, whichever is the lesser, plus attorney's fees, court costs, and other costs in connection with the collection of unpaid amounts.

4. Adjustments

Payment of any such bills shall not prejudice the right of any Non-Operator to protest or question the correctness thereof; provided, however, all bills and statements rendered to Non-Operators by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-four (24) months following the end of any such calendar year, unless within the said twenty-four (24) month period a Non-Operator takes written exception thereto and makes claim on Operator for adjustment. No adjustment favorable to Operator shall be made unless it is made within the same prescribed period. The provisions of this paragraph shall not prevent adjustments resulting from a physical inventory of Controllable Material as provided for in Section V.

5. Audits

A. Non-Operator, upon notice in writing to Operator and all other Non-Operators, shall have the right to audit Operator's accounts and records relating to the Joint Account for any calendar year within the twenty-four (24) month period following the end of such calendar year; provided, however, the making of an audit shall not extend the time for the taking of written exception to and the adjustments of accounts as provided for in Paragraph 4 of this Section I. Where there are two or more Non-Operators, the Non-Operators shall make every reasonable effort to conduct joint or simultaneous audits in a manner which will result in a minimum of inconvenience to the Operator. Operator shall bear no portion of the Non-Operators' audit cost incurred under this paragraph unless agreed to by the Operator.

6. Approval by Non-Operators

Where an approval or other agreement of the Parties or Non-Operators is expressly required under other sections of this Accounting Procedure and if the agreement to which this Accounting Procedure is attached contains no contrary provisions in regard thereto, Operator shall notify all Non-Operators of the Operator's proposal, and the agreement or approval of a majority in interest of the Non-Operators shall be controlling on all Non-Operators.

II. DIRECT CHARGES

Operator shall charge the Joint Account with the following items:

1. Rentals and Royalties

Lease rentals and royalties paid by Operator for the Joint Operations.

2. Labor

- A. (1) Salaries and wages of Operator's field employees directly employed on the Joint Property in the conduct of Joint Operations.
- (2) Salaries of First Level Supervisors in the field.
- (3) Salaries and wages of Technical Employees directly employed on the Joint Property if such charges are excluded from the Overhead rates.
- B. Operator's cost of holiday, vacation, sickness and disability benefits and other customary allowances paid to employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II. Such costs under this Paragraph 2B may be charged on a "when and as paid basis" or by "percentage assessment" on the amount of salaries and wages chargeable to the Joint Account under Paragraph 2A of this Section II. If percentage assessment is used, the rate shall be based on the Operator's cost experience.
- C. Expenditures or contributions made pursuant to assessments imposed by governmental authority which are applicable to Operator's costs chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II.
- D. Personal Expenses of those employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II.

3. Employee Benefits

Operator's current costs of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus, and other benefit plans of a like nature, applicable to Operator's labor cost chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II shall be Operator's actual cost not to exceed twenty per cent (20%).

4. Material

Material purchased or furnished by Operator for use on the Joint Property as provided under Section IV. Only such Material shall be purchased for or transferred to the Joint Property as may be required for immediate use and is reasonably practical and consistent with efficient and economical operations. The accumulation of surplus stocks shall be avoided.

5. Transportation

Transportation of employees and Material necessary for the Joint Operations but subject to the following limitations:

- A. If Material is moved to the Joint Property from the Operator's warehouse or other properties, no charge shall be made to the Joint Account for a distance greater than the distance from the nearest reliable supply store, recognized barge terminal, or railway receiving point where like material is normally available, unless agreed to by the Parties.
- B. If surplus Material is moved to Operator's warehouse or other storage point, no charge shall be made to the Joint Account for a distance greater than the distance to the nearest reliable supply store, recognized barge terminal, or railway receiving point unless agreed to by the Parties. No charge shall be made to the Joint Account for moving Material to other properties belonging to Operator, unless agreed to by the Parties.
- C. In the application of Subparagraphs A and B above, there shall be no equalization of actual gross trucking cost of \$200 or less excluding accessorial charges.

6. Services

The cost of contract services, equipment and utilities provided by outside sources, except services excluded by Paragraph 9 of Section II and Paragraph 1. ii of Section III. The cost of professional consultant services and contract services of technical personnel directly engaged on the Joint Property if such charges are excluded from the Overhead rates. The cost of professional consultant services or contract services of technical personnel not directly engaged on the Joint Property shall not be charged to the Joint Account unless previously agreed to by the Parties.

7. Equipment and Facilities Furnished by Operator

- A. Operator shall charge the Joint Account for use of Operator owned equipment and facilities at rates commensurate with costs of ownership and operation. Such rates shall include costs of maintenance, repairs, other operating expense, insurance, taxes, depreciation, and interest on investment not to exceed eight per cent (8%) per annum. Such rates shall not exceed average commercial rates currently prevailing in the immediate area of the Joint Property.
- B. In lieu of charges in Paragraph 7A above, Operator may elect to use average commercial rates prevailing in the immediate area of the Joint Property less 20%. For automotive equipment, Operator may elect to use rates published by the Petroleum Motor Transport Association.

8. Damages and Losses to Joint Property

All costs or expenses necessary for the repair or replacement of Joint Property made necessary because of damages or losses incurred by fire, flood, storm, theft, accident, or other cause, except those resulting from Operator's gross negligence or willful misconduct. Operator shall furnish Non-Operator written notice of damages or losses incurred as soon as practicable after a report thereof has been received by Operator.

9. Legal Expense

Expense of handling, investigating and settling litigation or claims, discharging of liens, payment of judgments and amounts paid for settlement of claims incurred in or resulting from operations under the agreement or necessary to protect or recover the Joint Property, except that no charge for services of Operator's legal staff or fees or expense of outside attorneys shall be made unless previously agreed to by the Parties. All other legal expense is considered to be covered by the overhead provisions of Section III unless otherwise agreed to by the Parties, except as provided in Section I, Paragraph 3.

10. Taxes

All taxes of every kind and nature assessed or levied upon or in connection with the Joint Property, the operation thereof, or the production therefrom, and which taxes have been paid by the Operator for the benefit of the Parties.

11. Insurance

Net premiums paid for insurance required to be carried for the Joint Operations for the protection of the Parties. In the event Joint Operations are conducted in a state in which Operator may act as self-insurer for Workmen's Compensation and/or Employers Liability under the respective state's laws, Operator may, at its election, include the risk under its self-insurance program and in that event, Operator shall include a charge at Operator's cost not to exceed manual rates.

12. Other Expenditures

Any other expenditure not covered or dealt with in the foregoing provisions of this Section II, or in Section III, and which is incurred by the Operator in the necessary and proper conduct of the Joint Operations.

III. OVERHEAD

1. Overhead - Drilling and Producing Operations

- i. As compensation for administrative, supervision, office services and warehousing costs, Operator shall charge drilling and producing operations on either:

- (X) Fixed Rate Basis, Paragraph 1A, or
() Percentage Basis, Paragraph 1B.

Unless otherwise agreed to by the Parties, such charge shall be in lieu of costs and expenses of all offices and salaries or wages plus applicable burdens and expenses of all personnel, except those directly chargeable under Paragraph 2A, Section II. The cost and expense of services from outside sources in connection with matters of taxation, traffic, accounting or matters before or involving governmental agencies shall be considered as included in the Overhead rates provided for in the above selected Paragraph of this Section III unless such cost and expense are agreed to by the Parties as a direct charge to the Joint Account.

- ii. The salaries, wages and Personal Expenses of Technical Employees and/or the cost of professional consultant services and contract services of technical personnel directly employed on the Joint Property shall () shall not (X) be covered by the Overhead rates.

A. Overhead - Fixed Rate Basis

- (1) Operator shall charge the Joint Account at the following rates per well per month:

Drilling Well Rate \$ 2,679.00

Producing Well Rate \$ 359.00

- (2) Application of Overhead - Fixed Rate Basis shall be as follows:

(a) Drilling Well Rate

- [1] Charges for onshore drilling wells shall begin on the date the well is spudded and terminate on the date the drilling or completion rig is released, whichever is later, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.
- [2] Charges for offshore drilling wells shall begin on the date when drilling or completion equipment arrives on location and terminate on the date the drilling or completion equipment moves off location or rig is released, whichever occurs first, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.
- [3] Charges for wells undergoing any type of workover or recompletion for a period of five (5) consecutive days or more shall be made at the drilling well rate. Such charges shall be applied for the period from date workover operations, with rig, commence through date of rig release, except that no charge shall be made during suspension of operations for fifteen (15) or more consecutive days.

(b) Producing Well Rates

- [1] An active well either produced or injected into for any portion of the month shall be considered as a one-well charge for the entire month.
 - [2] Each active completion in a multi-completed well in which production is not commingled down hole shall be considered as a one-well charge providing each completion is considered a separate well by the governing regulatory authority.
 - [3] An inactive gas well shut in because of overproduction or failure of purchaser to take the production shall be considered as a one-well charge providing the gas well is directly connected to a permanent sales outlet.
 - [4] A one-well charge may be made for the month in which plugging and abandonment operations are completed on any well.
 - [5] All other inactive wells (including but not limited to inactive wells covered by unit allowable, lease allowable, transferred allowable, etc.) shall not qualify for an overhead charge.
- (3) The well rates shall be adjusted as of the first day of April each year following the effective date of the agreement to which this Accounting Procedure is attached. The adjustment shall be computed by multiplying the rate currently in use by the percentage increase or decrease in the average weekly earnings of Crude Petroleum and Gas Production Workers for the last calendar year compared to the calendar year preceding as shown by the index of average weekly earnings of Crude Petroleum and Gas Fields Production Workers as published by the United States Department of Labor, Bureau of Labor Statistics, or the equivalent Canadian index as published by Statistics Canada, as applicable. The adjusted rates shall be the rates currently in use, plus or minus the computed adjustment.

B. Overhead - Percentage Basis

(1) Operator shall charge the Joint Account at the following rates:

(a) Development

_____ Percent (%) of the cost of Development of the Joint Property exclusive of costs provided under Paragraph 9 of Section II and all salvage credits.

(b) Operating

_____ Percent (%) of the cost of Operating the Joint Property exclusive of costs provided under Paragraphs 1 and 9 of Section II, all salvage credits, the value of injected substances purchased for secondary recovery and all taxes and assessments which are levied, assessed and paid upon the mineral interest in and to the Joint Property.

(2) Application of Overhead - Percentage Basis shall be as follows:

For the purpose of determining charges on a percentage basis under Paragraph 1B of this Section III, development shall include all costs in connection with drilling, redrilling, deepening or any remedial operations on any or all wells involving the use of drilling crew and equipment; also, preliminary expenditures necessary in preparation for drilling and expenditures incurred in abandoning when the well is not completed as a producer, and original cost of construction or installation of fixed assets, the expansion of fixed assets and any other project clearly discernible as a fixed asset, except Major Construction as defined in Paragraph 2 of this Section III. All other costs shall be considered as Operating.

2. Overhead - Major Construction

To compensate Operator for overhead costs incurred in the construction and installation of fixed assets, the expansion of fixed assets, and any other project clearly discernible as a fixed asset required for the development and operation of the Joint Property, Operator shall either negotiate a rate prior to the beginning of construction, or shall charge the Joint Account for Overhead based on the following rates for any Major Construction project in excess of \$ _____*:

A. _____* % of total costs if such costs are more than \$ _____* but less than \$ _____* ; plus

B. _____* % of total costs in excess of \$ _____* but less than \$1,000,000; plus

C. _____* % of total costs in excess of \$1,000,000. *TO BE NEGOTIATED

Total cost shall mean the gross cost of any one project. For the purpose of this paragraph, the component parts of a single project shall not be treated separately and the cost of drilling and workover wells shall be excluded.

3. Amendment of Rates

The Overhead rates provided for in this Section III may be amended from time to time only by mutual agreement between the Parties hereto if, in practice, the rates are found to be insufficient or excessive.

IV. PRICING OF JOINT ACCOUNT MATERIAL PURCHASES, TRANSFERS AND DISPOSITIONS

Operator is responsible for Joint Account Material and shall make proper and timely charges and credits for all material movements affecting the Joint Property. Operator shall provide all Material for use on the Joint Property; however, at Operator's option, such Material may be supplied by the Non-Operator. Operator shall make timely disposition of idle and/or surplus Material, such disposal being made either through sale to Operator or Non-Operator, division in kind, or sale to outsiders. Operator may purchase, but shall be under no obligation to purchase, interest of Non-Operators in surplus condition A or B Material. The disposal of surplus Controllable Material not purchased by the Operator shall be agreed to by the Parties.

1. Purchases

Material purchased shall be charged at the price paid by Operator after deduction of all discounts received. In case of Material found to be defective or returned to vendor for any other reason, credit shall be passed to the Joint Account when adjustment has been received by the Operator.

2. Transfers and Dispositions

Material furnished to the Joint Property and Material transferred from the Joint Property or disposed of by the Operator, unless otherwise agreed to by the Parties, shall be priced on the following bases exclusive of cash discounts:

A. New Material (Condition A)

(1) Tubular goods, except line pipe, shall be priced at the current new price in effect on date of movement on a maximum carload or barge load weight basis, regardless of quantity transferred, equalized to the lowest published price f.o.b. railway receiving point or recognized barge terminal nearest the Joint Property where such Material is normally available.

(2) Line Pipe

(a) Movement of less than 30,000 pounds shall be priced at the current new price, in effect at date of movement, as listed by a reliable supply store nearest the Joint Property where such Material is normally available.

(b) Movement of 30,000 pounds or more shall be priced under provisions of tubular goods pricing in Paragraph 2A (1) of this Section IV.

(3) Other Material shall be priced at the current new price, in effect at date of movement, as listed by a reliable supply store or f.o.b. railway receiving point nearest the Joint Property where such Material is normally available.

B. Good Used Material (Condition B)

Material in sound and serviceable condition and suitable for reuse without reconditioning:

(1) Material moved to the Joint Property

(a) At seventy-five percent (75%) of current new price, as determined by Paragraph 2A of this Section IV.

(2) Material moved from the Joint Property

(a) At seventy-five percent (75%) of current new price, as determined by Paragraph 2A of this Section IV, if Material was originally charged to the Joint Account as new Material, or

- (b) at sixty-five percent (65%) of current new price, as determined by Paragraph 2A of this Section IV, if Material was originally charged to the Joint Account as good used Material at seventy-five percent (75%) of current new price.

The cost of reconditioning, if any, shall be absorbed by the transferring property.

C. Other Used Material (Condition C and D)

(1) Condition C

Material which is not in sound and serviceable condition and not suitable for its original function until after reconditioning shall be priced at fifty percent (50%) of current new price as determined by Paragraph 2A of this Section IV. The cost of reconditioning shall be charged to the receiving property, provided Condition C value plus cost of reconditioning does not exceed Condition B value.

(2) Condition D

All other Material, including junk, shall be priced at a value commensurate with its use or at prevailing prices. Material no longer suitable for its original purpose but usable for some other purpose, shall be priced on a basis comparable with that of items normally used for such other purpose. Operator may dispose of Condition D Material under procedures normally utilized by the Operator without prior approval of Non-Operators.

D. Obsolete Material

Material which is serviceable and usable for its original function but condition and/or value of such Material is not equivalent to that which would justify a price as provided above may be specially priced as agreed to by the Parties. Such price should result in the Joint Account being charged with the value of the service rendered by such Material.

E. Pricing Conditions

- (1) Loading and unloading costs may be charged to the Joint Account at the rate of fifteen cents (15¢) per hundred weight on all tubular goods movements, in lieu of loading and unloading costs sustained, when actual hauling cost of such tubular goods are equalized under provisions of Paragraph 5 of Section II.
- (2) Material involving erection costs shall be charged at applicable percentage of the current knocked-down price of new Material.

3. Premium Prices

Whenever Material is not readily obtainable at published or listed prices because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the Joint Account for the required Material at the Operator's actual cost incurred in providing such Material, in making it suitable for use, and in moving it to the Joint Property; provided notice in writing is furnished to Non-Operators of the proposed charge prior to billing Non-Operators for such Material. Each Non-Operator shall have the right, by so electing and notifying Operator within ten days after receiving notice from Operator, to furnish in kind all or part of his share of such Material suitable for use and acceptable to Operator.

4. Warranty of Material Furnished by Operator

Operator does not warrant the Material furnished. In case of defective Material, credit shall not be passed to the Joint Account until adjustment has been received by Operator from the manufacturers or their agents.

V. INVENTORIES

The Operator shall maintain detailed records of Controllable Material.

1. Periodic Inventories, Notice and Representation

At reasonable intervals, Inventories shall be taken by Operator of the Joint Account Controllable Material. Written notice of intention to take inventory shall be given by Operator at least thirty (30) days before any inventory is to begin so that Non-Operators may be represented when any inventory is taken. Failure of Non-Operators to be represented at an inventory shall bind Non-Operators to accept the inventory taken by Operator.

2. Reconciliation and Adjustment of Inventories

Reconciliation of a physical inventory with the Joint Account shall be made, and a list of overages and shortages shall be furnished to the Non-Operators within six months following the taking of the inventory. Inventory adjustments shall be made by Operator with the Joint Account for overages and shortages, but Operator shall be held accountable only for shortages due to lack of reasonable diligence.

3. Special Inventories

Special Inventories may be taken whenever there is any sale or change of interest in the Joint Property. It shall be the duty of the party selling to notify all other Parties as quickly as possible after the transfer of interest takes place. In such cases, both the seller and the purchaser shall be governed by such inventory.

4. Expense of Conducting Periodic Inventories

The expense of conducting periodic Inventories shall not be charged to the Joint Account unless agreed to by the Parties.

August 16, 1979

Exxon Company U.S.A.
P. O. Box 1600
Midland, Texas 79702

Attn: ^{John} Joe B. Thomas

RE: Proposed Joint Venture
South Shoebar Field Area
Lea County, New Mexico

Gentlemen:

HNG Oil Company and Associates are the owners of a State of New Mexico Oil and Gas Lease covering the NE/4 of Section 33, T-16-S, R-35-E, Lea County, New Mexico. According to our records Exxon Company U.S.A. is the owner of an oil and gas lease covering, among other lands, the NW/4 of said Section 33.

HNG Oil Company proposes the formation of a 320 acre working interest unit comprised of the N/2 of said Section 33 for the drilling of a 13,000 foot Morrow test well to be located 1980' FWL and 660' FNL of Section 33.

Working interests of the parties would be as follows:

<u>Company</u>	<u>Acres</u>	<u>Percentage</u>
HNG Oil Company & Associates	160	50%
Exxon Company U.S.A.	160	50%
	320	100%

The attached AFE shows the cost of a dry hole to be \$729,713.00 and the cost of a completed well to be \$1,057,623.00.

You are invited to participate in this proposed venture as a working interest owner or in lieu thereof farmout your interest to the unit reserving a 1/16th of 8/8ths overriding royalty convertible to a 50% working interest upon payout of the test well, both proportionately reduced.

Your early consideration and reply to this proposal will be appreciated.

Yours very truly,

HNG OIL COMPANY

Raymond Parker
Raymond Parker
Manager of Lands

RP/jw
encl.

HNG EX-2
C. 6709

DRILLING AFE



AFE NO _____
 USE NO _____
 HNG WI _____
 AFE AMOUNT _____
 HNG EST. COST _____
 AFE DATE _____

☐ WILDCAT ☒ DEVELOPMENT ☐ INJECTION
☐ DRILLING ☒ DRILLING ☐ DRILLING
☐ COMPLETION ☒ COMPLETION ☐ COMPLETION
☐ RE-ENTRY ☐ RE-ENTRY ☐ RE-ENTRY

LEASE & WELL NO.	New Mexico State "33" Com #2	DEPTH & FORM	13,000 Morrow
LOCATION	1980' FWL & 660' FNL, Sec. 33, T16S, R35E		
COUNTY & STATE	Lea County, New Mexico	FIELD	
OPERATOR	HNG Oil Company	SPUD DATE	

INTANGIBLE WELL COST				
CODE	DESCRIPTION	DRILLING	COMPLETION	TOTAL
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5103	' Of " Intermediate Casing			
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5104	' Of 5-1/2" Tie-Back Casing			
5105	11500' Of 2-7/8" Tubing		48,550	48,550
5105	' Of " Tubing			
5119	Liner Equipment			
5106	Well Head Equipment	15,000	25,000	40,000
5107	Tanks		8,000	8,000
5108	Flow Lines		500	500
5109	Valves & Fittings		2,000	2,000
5110	Rods			
5111	Pumping Equipment - Surface			
5112	Production Equipment - Subsurface			
5113	Engines & Motors			
	(Continued on back of AFE)			

HNG OIL COMPANY APPROVAL

By	Date	By	Date	By	Date	By	Date	By	Date

JOINT OPERATOR APPROVAL

Firm _____ By _____ Title _____ Date _____

TANGIBLE WELL COST (Continued)				
		DRILLING	COMPLETION	TOTAL
5114	Heater-Treater & Separators		20,000	20,000
5115	Other Equipment			
5116	Buildings			
5117	Metering Equipment		500	500
5118	Non-Controllable Equipment			
5120	Supervision			
5121	Construction Cost		3,000	3,000
	Contingencies (10% of Tangible)	11,158	20,080	31,238
	Total Tangibles	122,733	220,880	343,613
	Total Well Cost	729,713	327,910	1,057,623

EXXON COMPANY, U.S.A.

POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702 • (915) 684-4411

September 25, 1979

Re: Proposed
HNG New Mexico State "33" Com #2
1980' FWL and 660' FNL
Section 33-16S-35E
Lea County, New Mexico

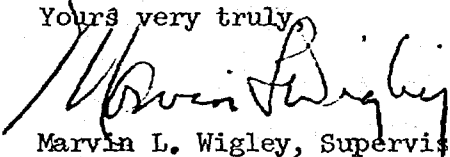
HNG Oil Company
P. O. Box 2267
Midland, TX 79702

Attn: Mr. Raymond Parker
Manager of Lands

Gentlemen:

Your proposal regarding the above captioned well as contained in your letter of August 16, 1979, has been considered. It is the purpose of this letter to advise you that we do not desire to either join or farmout in accordance with your request at this time.

Yours very truly,


Marvin L. Wigley, Supervisor
LAND-UNITIZATION

MLW:lpj

HNG EV 4
C# 6709

EXHIBIT " "

Attached to and made a part of

.....

.....

ACCOUNTING PROCEDURE JOINT OPERATIONS

I. GENERAL PROVISIONS

1. Definitions

"Joint Property" shall mean the real and personal property subject to the agreement to which this Accounting Procedure is attached.

"Joint Operations" shall mean all operations necessary or proper for the development, operation, protection and maintenance of the Joint Property.

"Joint Account" shall mean the account showing the charges paid and credits received in the conduct of the Joint Operations and which are to be shared by the Parties.

"Operator" shall mean the party designated to conduct the Joint Operations.

"Non-Operators" shall mean the parties to this agreement other than the Operator.

"Parties" shall mean Operator and Non-Operators.

"First Level Supervisors" shall mean those employees whose primary function in Joint Operations is the direct supervision of other employees and/or contract labor directly employed on the Joint Property in a field operating capacity.

"Technical Employees" shall mean those employees having special and specific engineering, geological or other professional skills, and whose primary function in Joint Operations is the handling of specific operating conditions and problems for the benefit of the Joint Property.

"Personal Expenses" shall mean travel and other reasonable reimbursable expenses of Operator's employees.

"Material" shall mean personal property, equipment or supplies acquired or held for use on the Joint Property.

"Controllable Material" shall mean Material which at the time is so classified in the Material Classification Manual as most recently recommended by the Council of Petroleum Accountants Societies of North America.

2. Statement and Billings

Operator shall bill Non-Operators on or before the last day of each month for their proportionate share of the Joint Account for the preceding month. Such bills will be accompanied by statements which identify the authority for expenditure, lease or facility, and all charges and credits, summarized by appropriate classifications of investment and expense except that items of Controllable Material and unusual charges and credits shall be separately identified and fully described in detail.

3. Advances and Payments by Non-Operators

Unless otherwise provided for in the agreement, the Operator may require the Non-Operators to advance their share of estimated cash outlay for the succeeding month's operation. Operator shall adjust each monthly billing to reflect advances received from the Non-Operators.

Each Non-Operator shall pay its proportion of all bills within fifteen (15) days after receipt. If payment is not made within such time, the unpaid balance shall bear interest monthly at the rate of twelve percent (12%) per annum or the maximum contract rate permitted by the applicable usury laws in the state in which the Joint Property is located, whichever is the lesser, plus attorney's fees, court costs, and other costs in connection with the collection of unpaid amounts.

4. Adjustments

Payment of any such bills shall not prejudice the right of any Non-Operator to protest or question the correctness thereof; provided, however, all bills and statements rendered to Non-Operators by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-four (24) months following the end of any such calendar year, unless within the said twenty-four (24) month period a Non-Operator takes written exception thereto and makes claim on Operator for adjustment. No adjustment favorable to Operator shall be made unless it is made within the same prescribed period. The provisions of this paragraph shall not prevent adjustments resulting from a physical inventory of Controllable Material as provided for in Section V.

5. Audits

A. Non-Operator, upon notice in writing to Operator and all other Non-Operators, shall have the right to audit Operator's accounts and records relating to the Joint Account for any calendar year within the twenty-four (24) month period following the end of such calendar year; provided, however, the making of an audit shall not extend the time for the taking of written exception to and the adjustments of accounts as provided for in Paragraph 4 of this Section I. Where there are two or more Non-Operators, the Non-Operators shall make every reasonable effort to conduct joint or simultaneous audits in a manner which will result in a minimum of inconvenience to the Operator. Operator shall bear no portion of the Non-Operators' audit cost incurred under this paragraph unless agreed to by the Operator.

6. Approval by Non-Operators

Where an approval or other agreement of the Parties or Non-Operators is expressly required under other sections of this Accounting Procedure and if the agreement to which this Accounting Procedure is attached contains no contrary provisions in regard thereto, Operator shall notify all Non-Operators of the Operator's proposal, and the agreement or approval of a majority in interest of the Non-Operators shall be controlling on all Non-Operators.

II. DIRECT CHARGES

Operator shall charge the Joint Account with the following items:

1. Rentals and Royalties

Lease rentals and royalties paid by Operator for the Joint Operations.

2. Labor

- A. (1) Salaries and wages of Operator's field employees directly employed on the Joint Property in the conduct of Joint Operations.
- (2) Salaries of First Level Supervisors in the field.
- (3) Salaries and wages of Technical Employees directly employed on the Joint Property if such charges are excluded from the Overhead rates.
- B. Operator's cost of holiday, vacation, sickness and disability benefits and other customary allowances paid to employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II. Such costs under this Paragraph 2B may be charged on a "when and as paid basis" or by "percentage assessment" on the amount of salaries and wages chargeable to the Joint Account under Paragraph 2A of this Section II. If percentage assessment is used, the rate shall be based on the Operator's cost experience.
- C. Expenditures or contributions made pursuant to assessments imposed by governmental authority which are applicable to Operator's costs chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II.
- D. Personal Expenses of those employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II.

3. Employee Benefits

Operator's current costs of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus, and other benefit plans of a like nature, applicable to Operator's labor cost chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II shall be Operator's actual cost not to exceed twenty per cent (20%).

4. Material

Material purchased or furnished by Operator for use on the Joint Property as provided under Section IV. Only such Material shall be purchased for or transferred to the Joint Property as may be required for immediate use and is reasonably practical and consistent with efficient and economical operations. The accumulation of surplus stocks shall be avoided.

5. Transportation

Transportation of employees and Material necessary for the Joint Operations but subject to the following limitations:

- A. If Material is moved to the Joint Property from the Operator's warehouse or other properties, no charge shall be made to the Joint Account for a distance greater than the distance from the nearest reliable supply store, recognized barge terminal, or railway receiving point where like material is normally available, unless agreed to by the Parties.
- B. If surplus Material is moved to Operator's warehouse or other storage point, no charge shall be made to the Joint Account for a distance greater than the distance to the nearest reliable supply store, recognized barge terminal, or railway receiving point unless agreed to by the Parties. No charge shall be made to the Joint Account for moving Material to other properties belonging to Operator, unless agreed to by the Parties.
- C. In the application of Subparagraphs A and B above, there shall be no equalization of actual gross trucking cost of \$200 or less excluding accessorial charges.

6. Services

The cost of contract services, equipment and utilities provided by outside sources, except services excluded by Paragraph 9 of Section II and Paragraph 1. ii of Section III. The cost of professional consultant services and contract services of technical personnel directly engaged on the Joint Property if such charges are excluded from the Overhead rates. The cost of professional consultant services or contract services of technical personnel not directly engaged on the Joint Property shall not be charged to the Joint Account unless previously agreed to by the Parties.

7. Equipment and Facilities Furnished by Operator

- A. Operator shall charge the Joint Account for use of Operator owned equipment and facilities at rates commensurate with costs of ownership and operation. Such rates shall include costs of maintenance, repairs, other operating expense, insurance, taxes, depreciation, and interest on investment not to exceed eight per cent (8%) per annum. Such rates shall not exceed average commercial rates currently prevailing in the immediate area of the Joint Property.
- B. In lieu of charges in Paragraph 7A above, Operator may elect to use average commercial rates prevailing in the immediate area of the Joint Property less 20%. For automotive equipment, Operator may elect to use rates published by the Petroleum Motor Transport Association.

8. Damages and Losses to Joint Property

All costs or expenses necessary for the repair or replacement of Joint Property made necessary because of damages or losses incurred by fire, flood, storm, theft, accident, or other cause, except those resulting from Operator's gross negligence or willful misconduct. Operator shall furnish Non-Operator written notice of damages or losses incurred as soon as practicable after a report thereof has been received by Operator.

9. Legal Expense

Expense of handling, investigating and settling litigation or claims, discharging of liens, payment of judgments and amounts paid for settlement of claims incurred in or resulting from operations under the agreement or necessary to protect or recover the Joint Property, except that no charge for services of Operator's legal staff or fees or expense of outside attorneys shall be made unless previously agreed to by the Parties. All other legal expense is considered to be covered by the overhead provisions of Section III unless otherwise agreed to by the Parties, except as provided in Section I, Paragraph 3.

10. Taxes

All taxes of every kind and nature assessed or levied upon or in connection with the Joint Property, the operation thereof, or the production therefrom, and which taxes have been paid by the Operator for the benefit of the Parties.

11. Insurance

Net premiums paid for insurance required to be carried for the Joint Operations for the protection of the Parties. In the event Joint Operations are conducted in a state in which Operator may act as self-insurer for Workmen's Compensation and/or Employers Liability under the respective state's laws, Operator may, at its election, include the risk under its self-insurance program and in that event, Operator shall include a charge at Operator's cost not to exceed manual rates.

12. Other Expenditures

Any other expenditure not covered or dealt with in the foregoing provisions of this Section II, or in Section III, and which is incurred by the Operator in the necessary and proper conduct of the Joint Operations.

III. OVERHEAD

1. Overhead - Drilling and Producing Operations

- i. As compensation for administrative, supervision, office services and warehousing costs, Operator shall charge drilling and producing operations on either:

- (☒) Fixed Rate Basis, Paragraph 1A, or
() Percentage Basis, Paragraph 1B.

Unless otherwise agreed to by the Parties, such charge shall be in lieu of costs and expenses of all offices and salaries or wages plus applicable burdens and expenses of all personnel, except those directly chargeable under Paragraph 2A, Section II. The cost and expense of services from outside sources in connection with matters of taxation, traffic, accounting or matters before or involving governmental agencies shall be considered as included in the Overhead rates provided for in the above selected Paragraph of this Section III unless such cost and expense are agreed to by the Parties as a direct charge to the Joint Account.

- ii. The salaries, wages and Personal Expenses of Technical Employees and/or the cost of professional consultant services and contract services of technical personnel directly employed on the Joint Property shall () shall not (☒) be covered by the Overhead rates.

A. Overhead - Fixed Rate Basis

- (1) Operator shall charge the Joint Account at the following rates per well per month:

Drilling Well Rate \$ 2,679.00
Producing Well Rate \$ 359.00

- (2) Application of Overhead - Fixed Rate Basis shall be as follows:

(a) Drilling Well Rate

- [1] Charges for onshore drilling wells shall begin on the date the well is spudded and terminate on the date the drilling or completion rig is released, whichever is later, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.
- [2] Charges for offshore drilling wells shall begin on the date when drilling or completion equipment arrives on location and terminate on the date the drilling or completion equipment moves off location or rig is released, whichever occurs first, except that no charge shall be made during suspension of drilling operations for fifteen (15) or more consecutive days.
- [3] Charges for wells undergoing any type of workover or recompletion for a period of five (5) consecutive days or more shall be made at the drilling well rate. Such charges shall be applied for the period from date workover operations, with rig, commence through date of rig release, except that no charge shall be made during suspension of operations for fifteen (15) or more consecutive days.

(b) Producing Well Rates

- [1] An active well either produced or injected into for any portion of the month shall be considered as a one-well charge for the entire month.
- [2] Each active completion in a multi-completed well in which production is not commingled down hole shall be considered as a one-well charge providing each completion is considered a separate well by the governing regulatory authority.
- [3] An inactive gas well shut in because of overproduction or failure of purchaser to take the production shall be considered as a one-well charge providing the gas well is directly connected to a permanent sales outlet.
- [4] A one-well charge may be made for the month in which plugging and abandonment operations are completed on any well.
- [5] All other inactive wells (including but not limited to inactive wells covered by unit allowable, lease allowable, transferred allowable, etc.) shall not qualify for an overhead charge.

- (3) The well rates shall be adjusted as of the first day of April each year following the effective date of the agreement to which this Accounting Procedure is attached. The adjustment shall be computed by multiplying the rate currently in use by the percentage increase or decrease in the average weekly earnings of Crude Petroleum and Gas Production Workers for the last calendar year compared to the calendar year preceding as shown by the index of average weekly earnings of Crude Petroleum and Gas Fields Production Workers as published by the United States Department of Labor, Bureau of Labor Statistics, or the equivalent Canadian index as published by Statistics Canada, as applicable. The adjusted rates shall be the rates currently in use, plus or minus the computed adjustment.

B. Overhead - Percentage Basis

(1) Operator shall charge the Joint Account at the following rates:

(a) Development

_____ Percent (%) of the cost of Development of the Joint Property exclusive of costs provided under Paragraph 9 of Section II and all salvage credits.

(b) Operating

_____ Percent (%) of the cost of Operating the Joint Property exclusive of costs provided under Paragraphs 1 and 9 of Section II, all salvage credits, the value of injected substances purchased for secondary recovery and all taxes and assessments which are levied, assessed and paid upon the mineral interest in and to the Joint Property.

(2) Application of Overhead - Percentage Basis shall be as follows:

For the purpose of determining charges on a percentage basis under Paragraph 1B of this Section III, development shall include all costs in connection with drilling, redrilling, deepening or any remedial operations on any or all wells involving the use of drilling crew and equipment; also, preliminary expenditures necessary in preparation for drilling and expenditures incurred in abandoning when the well is not completed as a producer, and original cost of construction or installation of fixed assets, the expansion of fixed assets and any other project clearly discernible as a fixed asset, except Major Construction as defined in Paragraph 2 of this Section III. All other costs shall be considered as Operating.

2. Overhead - Major Construction

To compensate Operator for overhead costs incurred in the construction and installation of fixed assets, the expansion of fixed assets, and any other project clearly discernible as a fixed asset required for the development and operation of the Joint Property, Operator shall either negotiate a rate prior to the beginning of construction, or shall charge the Joint Account for Overhead based on the following rates for any Major Construction project in excess of \$ _____:

A. _____ % of total costs if such costs are more than \$ _____ but less than \$ _____; plus

B. _____ % of total costs in excess of \$ _____ but less than \$1,000,000; plus

C. _____ % of total costs in excess of \$1,000,000. *TO BE NEGOTIATED

Total cost shall mean the gross cost of any one project. For the purpose of this paragraph, the component parts of a single project shall not be treated separately and the cost of drilling and workover wells shall be excluded.

3. Amendment of Rates

The Overhead rates provided for in this Section III may be amended from time to time only by mutual agreement between the Parties hereto if, in practice, the rates are found to be insufficient or excessive.

IV. PRICING OF JOINT ACCOUNT MATERIAL PURCHASES, TRANSFERS AND DISPOSITIONS

Operator is responsible for Joint Account Material and shall make proper and timely charges and credits for all material movements affecting the Joint Property. Operator shall provide all Material for use on the Joint Property; however, at Operator's option, such Material may be supplied by the Non-Operator. Operator shall make timely disposition of idle and/or surplus Material, such disposal being made either through sale to Operator or Non-Operator, division in kind, or sale to outsiders. Operator may purchase, but shall be under no obligation to purchase, interest of Non-Operators in surplus condition A or B Material. The disposal of surplus Controllable Material not purchased by the Operator shall be agreed to by the Parties.

1. Purchases

Material purchased shall be charged at the price paid by Operator after deduction of all discounts received. In case of Material found to be defective or returned to vendor for any other reason, credit shall be passed to the Joint Account when adjustment has been received by the Operator.

2. Transfers and Dispositions

Material furnished to the Joint Property and Material transferred from the Joint Property or disposed of by the Operator, unless otherwise agreed to by the Parties, shall be priced on the following bases exclusive of cash discounts:

A. New Material (Condition A)

(1) Tubular goods, except line pipe, shall be priced at the current new price in effect on date of movement on a maximum carload or barge load weight basis, regardless of quantity transferred, equalized to the lowest published price f.o.b. railway receiving point or recognized barge terminal nearest the Joint Property where such Material is normally available.

(2) Line Pipe

(a) Movement of less than 30,000 pounds shall be priced at the current new price, in effect at date of movement, as listed by a reliable supply store nearest the Joint Property where such Material is normally available.

(b) Movement of 30,000 pounds or more shall be priced under provisions of tubular goods pricing in Paragraph 2A (1) of this Section IV.

(3) Other Material shall be priced at the current new price, in effect at date of movement, as listed by a reliable supply store or f.o.b. railway receiving point nearest the Joint Property where such Material is normally available.

B. Good Used Material (Condition B)

Material in sound and serviceable condition and suitable for reuse without reconditioning:

(1) Material moved to the Joint Property

(a) At seventy-five percent (75%) of current new price, as determined by Paragraph 2A of this Section IV.

(2) Material moved from the Joint Property

(a) At seventy-five percent (75%) of current new price, as determined by Paragraph 2A of this Section IV, if Material was originally charged to the Joint Account as new Material, or

- (b) at sixty-five percent (65%) of current new price, as determined by Paragraph 2A of this Section IV, if Material was originally charged to the Joint Account as good used Material at seventy-five percent (75%) of current new price.

The cost of reconditioning, if any, shall be absorbed by the transferring property.

C. Other Used Material (Condition C and D)

(1) Condition C

Material which is not in sound and serviceable condition and not suitable for its original function until after reconditioning shall be priced at fifty percent (50%) of current new price as determined by Paragraph 2A of this Section IV. The cost of reconditioning shall be charged to the receiving property, provided Condition C value plus cost of reconditioning does not exceed Condition B value.

(2) Condition D

All other Material, including junk, shall be priced at a value commensurate with its use or at prevailing prices. Material no longer suitable for its original purpose but usable for some other purpose, shall be priced on a basis comparable with that of items normally used for such other purpose. Operator may dispose of Condition D Material under procedures normally utilized by the Operator without prior approval of Non-Operators.

D. Obsolete Material

Material which is serviceable and usable for its original function but condition and/or value of such Material is not equivalent to that which would justify a price as provided above may be specially priced as agreed to by the Parties. Such price should result in the Joint Account being charged with the value of the service rendered by such Material.

E. Pricing Conditions

- (1) Loading and unloading costs may be charged to the Joint Account at the rate of fifteen cents (15¢) per hundred weight on all tubular goods movements, in lieu of loading and unloading costs sustained, when actual hauling cost of such tubular goods are equalized under provisions of Paragraph 5 of Section II.

- (2) Material involving erection costs shall be charged at applicable percentage of the current knocked-down price of new Material.

3. Premium Prices

Whenever Material is not readily obtainable at published or listed prices because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the Joint Account for the required Material at the Operator's actual cost incurred in providing such Material, in making it suitable for use, and in moving it to the Joint Property; provided notice in writing is furnished to Non-Operators of the proposed charge prior to billing Non-Operators for such Material. Each Non-Operator shall have the right, by so electing and notifying Operator within ten days after receiving notice from Operator, to furnish in kind all or part of his share of such Material suitable for use and acceptable to Operator.

4. Warranty of Material Furnished by Operator

Operator does not warrant the Material furnished. In case of defective Material, credit shall not be passed to the Joint Account until adjustment has been received by Operator from the manufacturers or their agents.

V. INVENTORIES

The Operator shall maintain detailed records of Controllable Material.

1. Periodic Inventories, Notice and Representation

At reasonable intervals, Inventories shall be taken by Operator of the Joint Account Controllable Material. Written notice of intention to take inventory shall be given by Operator at least thirty (30) days before any inventory is to begin so that Non-Operators may be represented when any inventory is taken. Failure of Non-Operators to be represented at an inventory shall bind Non-Operators to accept the inventory taken by Operator.

2. Reconciliation and Adjustment of Inventories

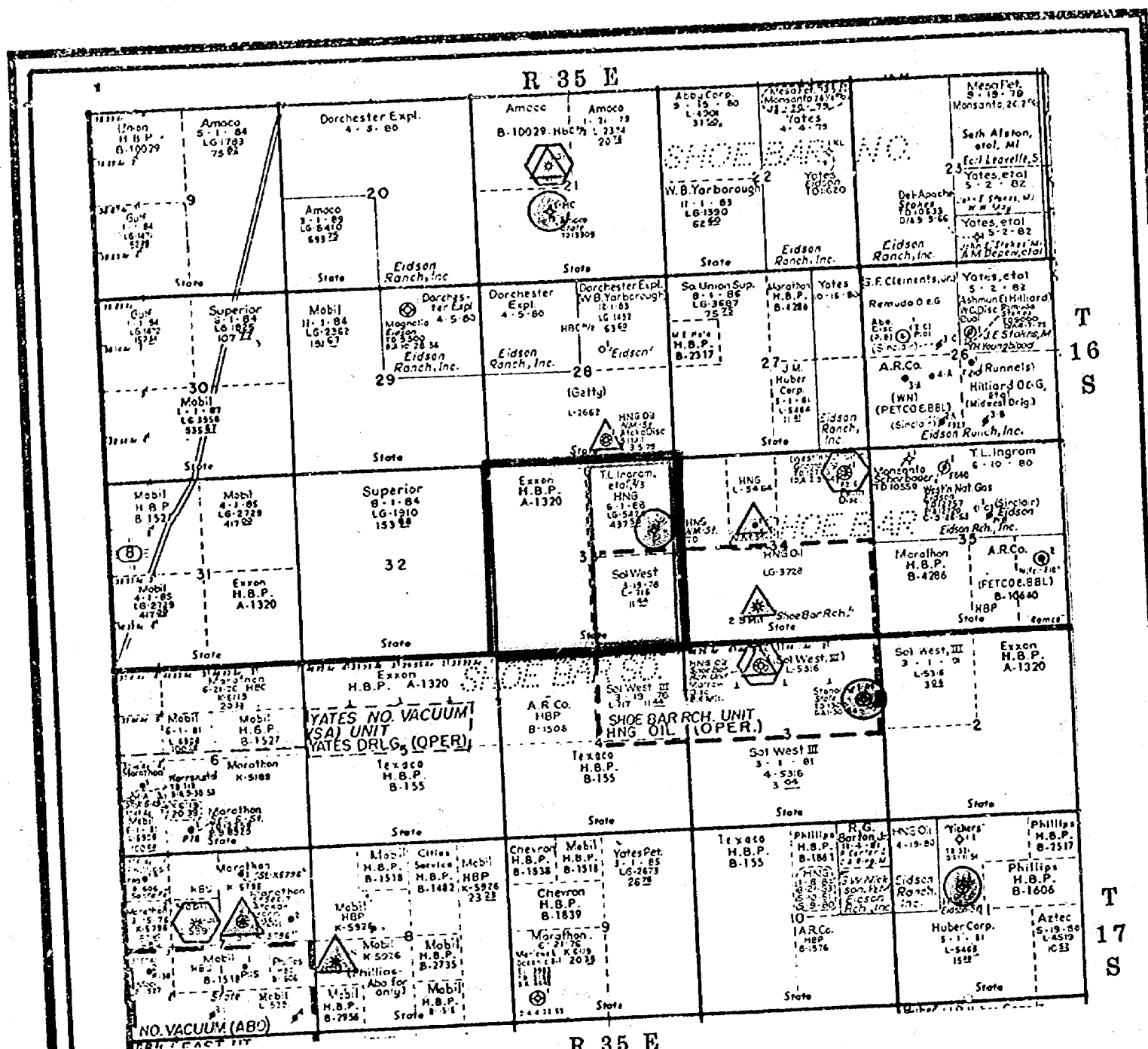
Reconciliation of a physical inventory with the Joint Account shall be made, and a list of overages and shortages shall be furnished to the Non-Operators within six months following the taking of the inventory. Inventory adjustments shall be made by Operator with the Joint Account for overages and shortages, but Operator shall be held accountable only for shortages due to lack of reasonable diligence.

3. Special Inventories

Special Inventories may be taken whenever there is any sale or change of interest in the Joint Property. It shall be the duty of the party selling to notify all other Parties as quickly as possible after the transfer of interest takes place. In such cases, both the seller and the purchaser shall be governed by such inventory.

4. Expense of Conducting Periodic Inventories

The expense of conducting periodic Inventories shall not be charged to the Joint Account unless agreed to by the Parties.



EXXON COMPANY, U. S. A.
PRODUCTION DEPARTMENT
Midcontinent Division Andrews District

WEST SHOEBAR AREA

Sec-33 T-16-S R-35-E LEA NEW MEXICO
LOCATION COUNTY STATE

ATOKA & MORROW PRODUCTION
HORIZON

SCALE 1 in. equals 4000ft. CONTOUR INTERVAL
DATE Oct. 1979 GEOLOGIST G.A. Aydinian

BEFORE EXAMINER MUTTER
OIL CONSERVATION DIVISION
EXXON EXHIBIT NO. 1
CASE NO. 6709

- Atoka Producer
- Morrow Producer
- Atoka & Morrow production
- Atoka & Morrow dry hole

TYPE LOG WEST SHOEBAR AREA

HNG Shoebar Ranch Unit 3-1

11,940
12,686

ATOKA

12,520

MORROW

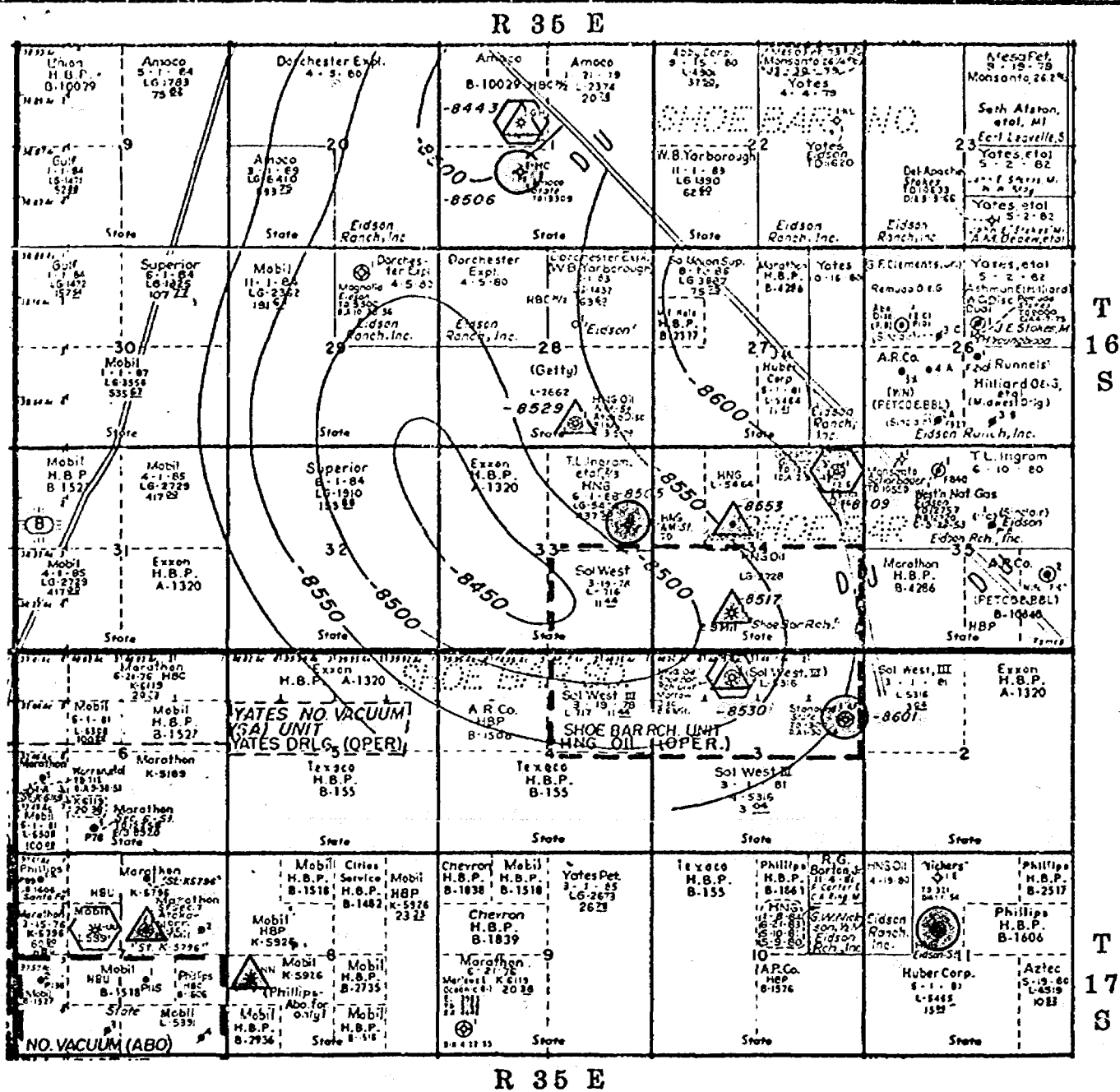
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DLI

ATOKA PAY

MORROW PAY

DEPT. OF THE INTERIOR
OIL CONSERVATION DIVISION
EXXON
CASE NO. 6709



EXXON COMPANY, U. S. A.
PRODUCTION DEPARTMENT
 Midcontinent Division Andrews District

WEST SHOEBAR AREA

Sec-33 T-16-S R-35-E LEA NEW MEXICO

LOCATION COUNTY STATE

MORROW STRUCTURE

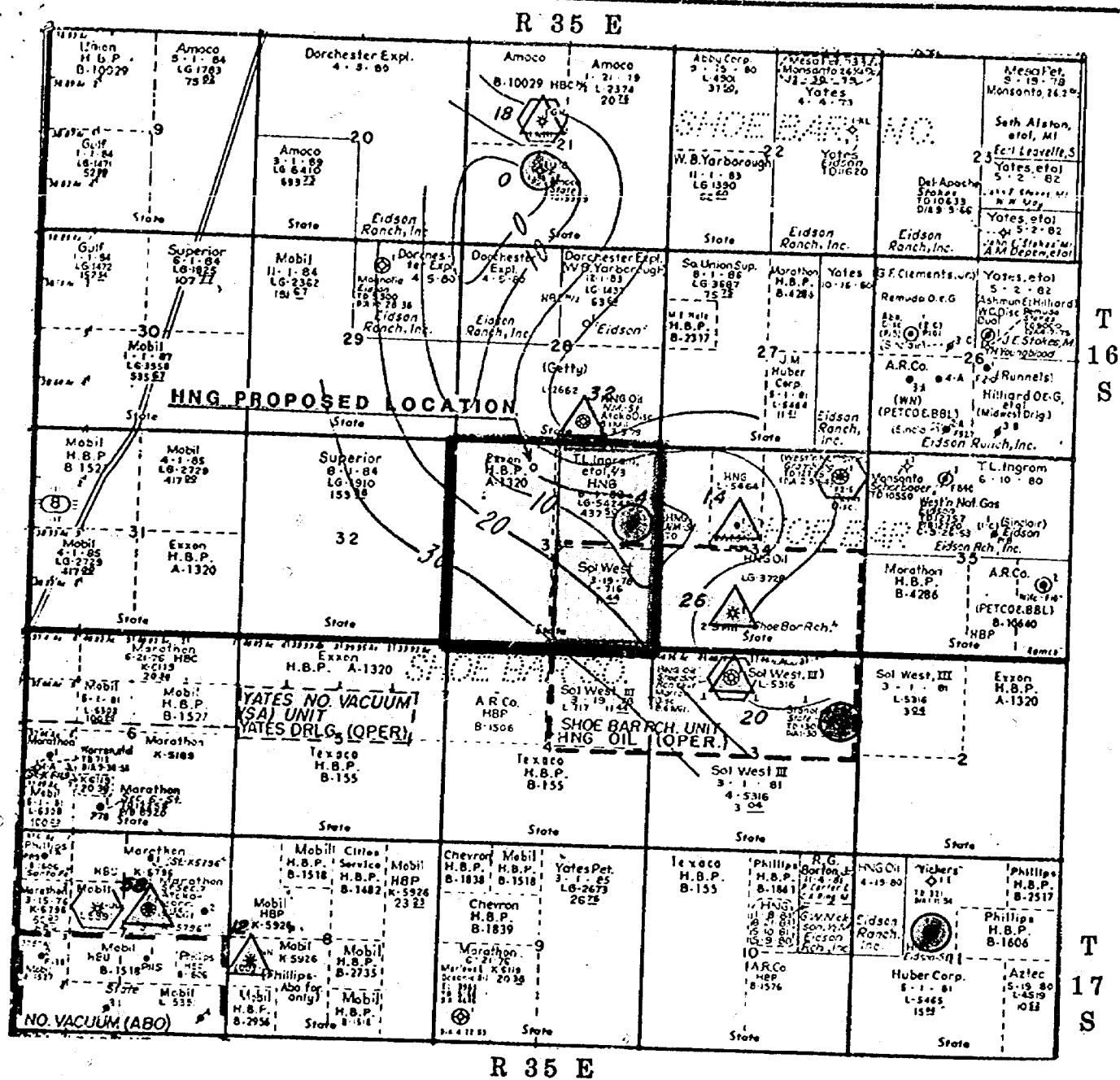
HORIZON

SCALE **1 in. equals 4000 ft.** CONTOUR INTERVAL **50 ft.**

DATE **Oct. 1979** GEOLOGIST **G.A. Aydinian**

▲ **Atoka Producer** △ **Atoka & Morrow production**
 ⬡ **Morrow Producer** ● **Atoka & Morrow dry hole**

DEPARTMENT OF MINES
 OIL & GAS DIVISION
EXXON UNIT NO. **3**
 CASE NO. **6709**



EXXON COMPANY, U. S. A.
PRODUCTION DEPARTMENT
Midcontinent Division Andrews District

WEST SHOEBAR AREA

Sec-33 T-16-S R-35-E LEA NEW MEXICO

LOCATION COUNTY STATE

ATOKA NET PAY

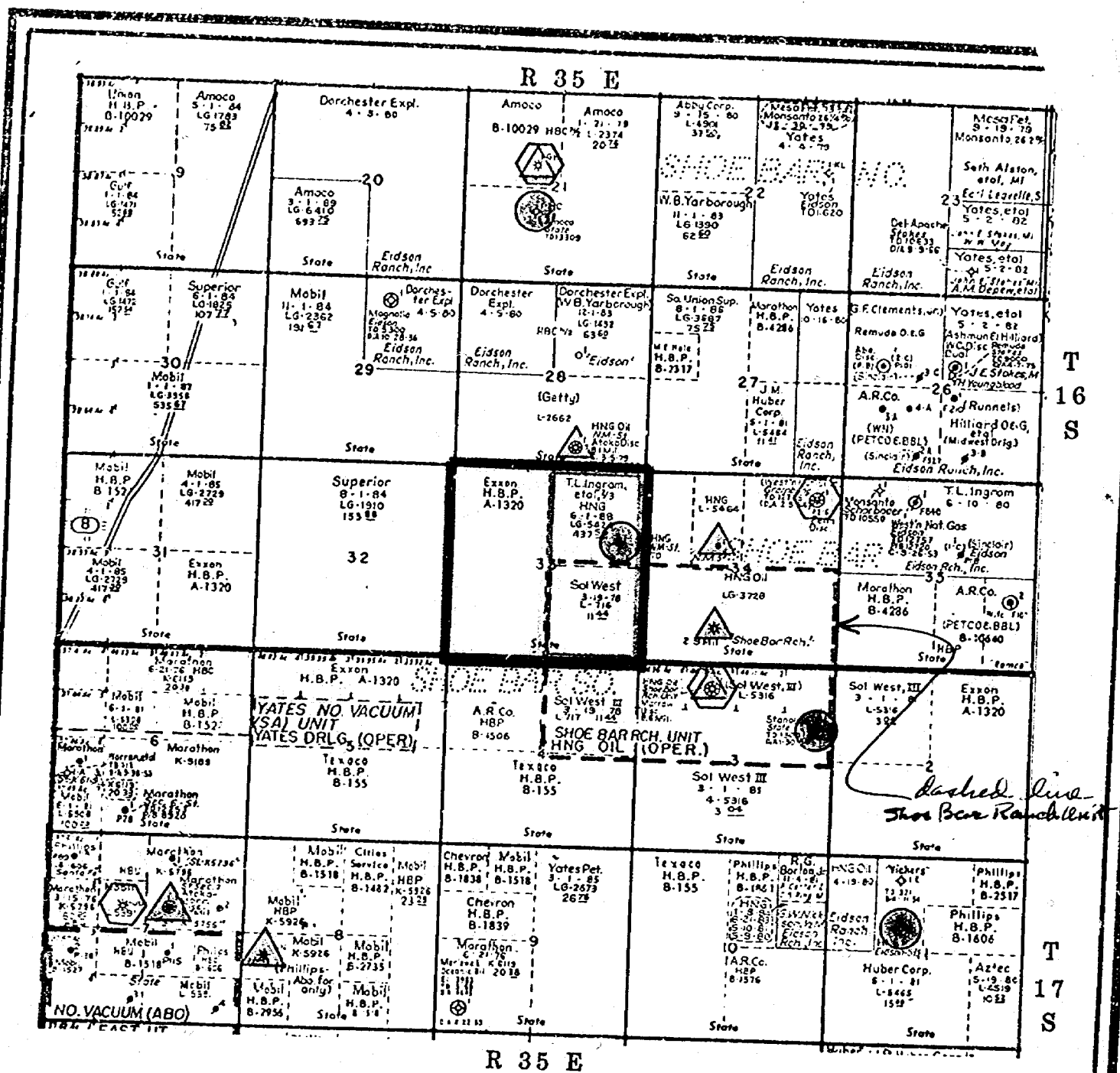
HORIZON

SCALE 1 in. equals 4000ft. CONTOUR INTERVAL 10 ft.

DATE Oct. 1979 GEOLOGIST G.A. Aydinian

BEFORE EXAMINER NUTT
OIL CONSERVATION DIVISION
EXXON EXHIBIT NO. 4
CASE NO. 6709

- Atoka Producer
- Morrow Producer
- Atoka & Morrow production
- Atoka & Morrow dry hole



EXXON COMPANY, U. S. A.
PRODUCTION DEPARTMENT
 Midcontinent Division Andrews District

WEST SHOEBAR AREA

Sec-33 T-16-S R-35-E LEA NEW MEXICO

LOCATION COUNTY STATE

ATOKA & MORROW PRODUCTION

HORIZON

SCALE 1 in. equals 4000ft. CONTOUR INTERVAL

DATE Oct. 1979 GEOLOGIST G.A. Aydinian

BEFORE EXAMINER NUTTER

OIL CONSERVATION DIVISION

EXXON EXHIBIT NO. 1

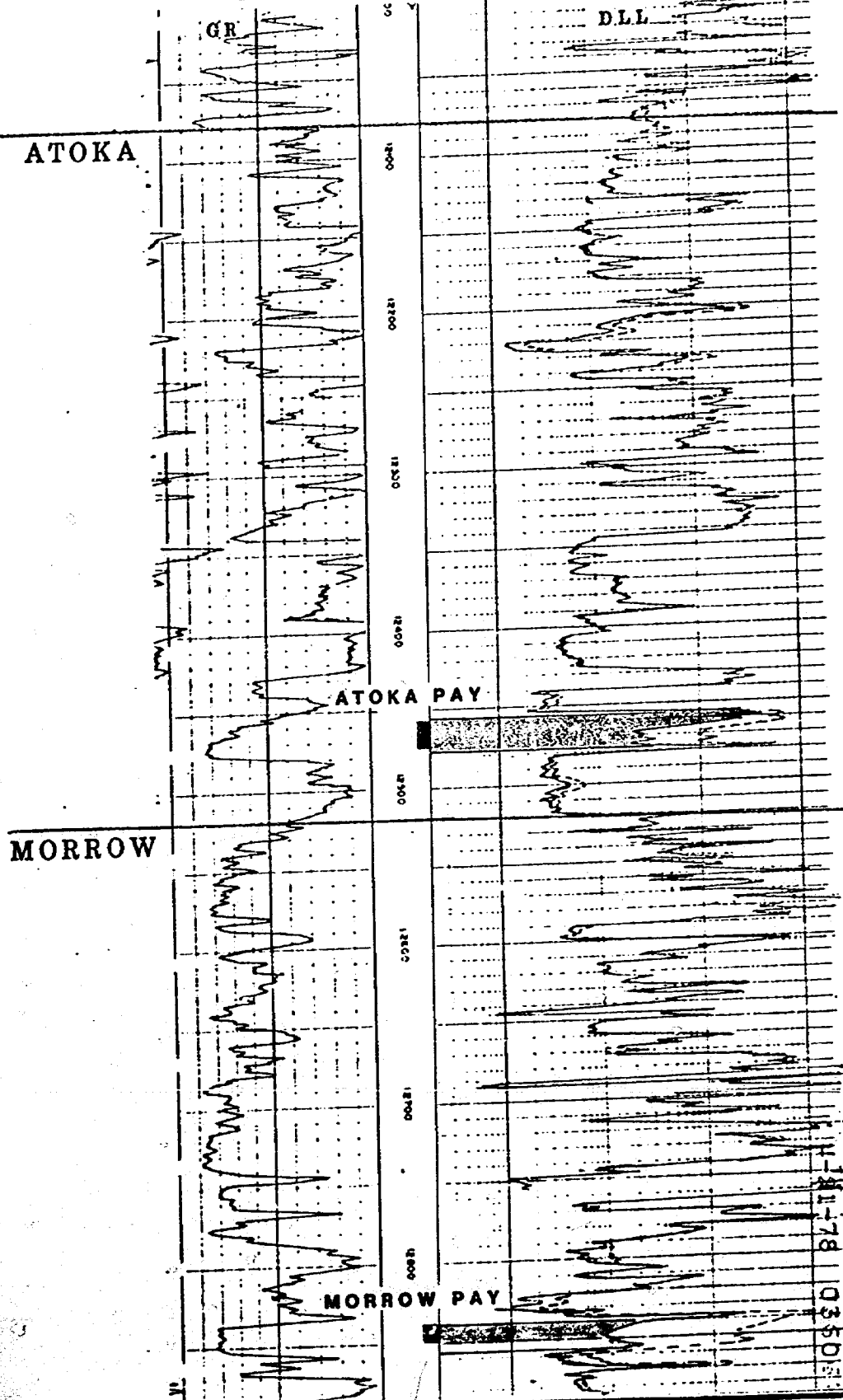
CASE NO. 6709

- Atoka Producer
- Morrow Producer
- Atoka & Morrow production
- Atoka & Morrow dry hole

TYPE LOG WEST SHOEBAR AREA

HNG Shoebar Ranch Unit 3-1

*Gamma Ray
Dual Latero Log*



12080

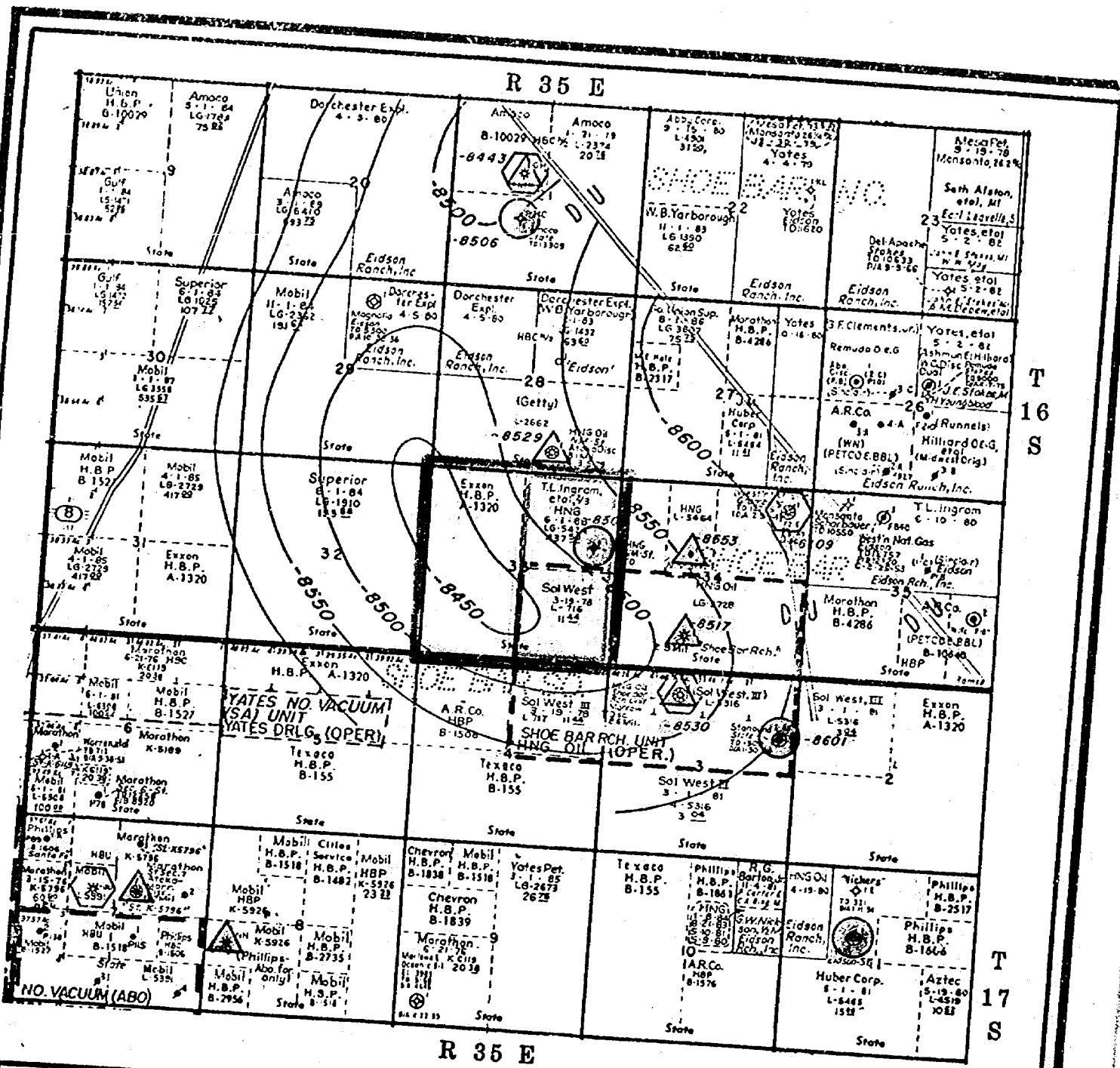
12460

12480

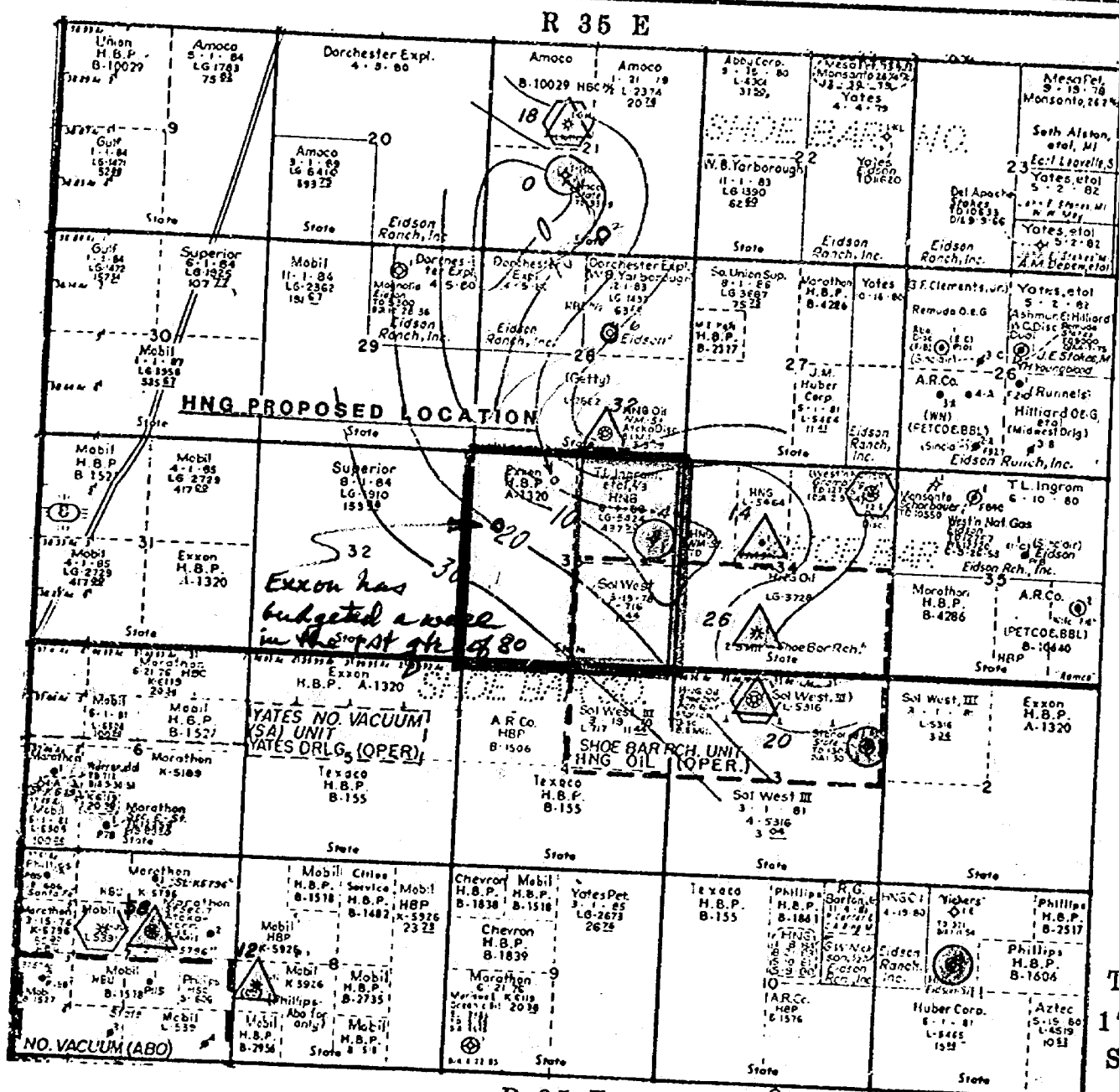
12520

*6% porosity
or
more*

RECORDING UNIT	2
EXXON	6709
CASE NO.	6709



EXXON EXHIBIT NO. 3
CASE NO. 6709



EXXON COMPANY, U. S. A.
 PRODUCTION DEPARTMENT
 Midcontinent Division Andrews District

WEST SHOEBAR AREA

Sec-32 T-16-S R-35-E LEA NEW MEXICO

LOCATION COUNTY STATE

ATOKA NET PAY

HORIZON

SCALE 1 in. equals 4000 ft. CONTOUR INTERVAL 10 ft.

DATE Oct. 1979 GEOLOGIST G.A. Aydinian

- Atoka Producer
- Morrow Producer

- Atoka & Morrow production
- Atoka & Morrow dry hole

Lytle: Reserves Under N/2 33
 1.5 BCF NE 1/4 + 1/2
 1.8 BCF NW 1/4 + 1/2
 @ 80% recy of volumetric reserves
 @ \$2.00/mcf \$300,000,000 more under N/2
 Exxon would lose \$600,000

BEFORE THE UNITED STATES
 OIL CONSERVATION DIVISION

EXXON EXHIBIT NO. 4

CASE NO. 6709

*Lytle thinks 200% risk factor too high
 Should be no more than 50%*

Dockets Nos. 43-79 and 44-79 are tentatively set for November 28 and December 12, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 14, 1979

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for December, 1979, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for December, 1979, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 6715: Application of Texaco Inc. for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Loomis Fed. Well No. 1 to be drilled 1600 feet from the North line and 660 feet from the West line of Section 5, Township 21 South, Range 32 East, South Salt Lake-Morrow Gas Pool, the N/2 of said Section 5 to be dedicated to the well.

CASE 6707: (Continued from October 31, 1979, Examiner Hearing)

Application of Gulf Oil Corporation for a unit agreement, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Southeast Bisti Unit Area, comprising 7,048 acres, more or less, of State and Federal lands in Townships 24 and 25 North, Range 10 West.

CASE 6716: Application of Alpha Twenty-One Production Company for two non-standard proration units and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 40-acre non-standard proration unit comprising the NW/4 SE/4 of Section 8, Township 25 South, Range 37 East, Jalmat Gas Pool, to be dedicated to El Paso Natural Gas Company's Langlie Federal Well No. 3, and also a 120-acre unit comprising the E/2 SE/4 and SW/4 SE/4 of said Section 8 to be dedicated to a well to be drilled by applicant at a standard location thereon; applicant further seeks a waiver of existing well spacing requirements and a finding that the drilling of said well is necessary to effectively and efficiently drain that portion of an existing proration unit which cannot be so drained by the existing well.

CASE 6717: Application of O. H. Berry for a non-standard proration unit and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 160-acre non-standard gas proration unit comprising the NE/4 of Section 15, Township 24 South, Range 36 East, Jalmat Gas Pool, to be dedicated to his Isbell Well No. 6 at an unorthodox location 418 feet from the North line and 351 feet from the East line of said Section 15.

CASE 6718: Application of Southland Royalty Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Morrow test well to be drilled 1325 feet from the North line and 2303 feet from the East line of Section 14, Township 19 South, Range 29 East, Oil-Potash Area, the E/2 of said Section 14 to be dedicated to the well.

CASE 6719: Application of Sam H. Snoddy for an amendment to Order No. R-5521, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-5521, which authorizes the directional drilling of the Federal Well No. 2 in Section 25, Township 20 South, Range 32 East, to permit the well to be bottomed at approximately 1014 feet from the South line and 1285 feet from the West line of said Section 25.

CASE 6710: (Continued from October 31, 1979, Examiner Hearing)

Application of ARCO Oil and Gas Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinebry and Montoya production in the wellbores of the following wells on its State Y Lease: No. 3 located in Unit B, No. 6 located in Unit H, and No. 7 located in Unit A, all in Section 25, Township 25 South, Range 37 East.

CASE 6720: Application of ARCO Oil and Gas Company to drill a horizontal drainhole, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval to drill and complete its Empire Abo Unit Well No. J-213, located in Unit E of Section 6, Township 18 South, Range 28 East, Empire-Abo Pool, with a single horizontal drainhole of about 200 feet in length in the Abo formation.

- CASE 6721: Application of Aminoil USA, Inc. for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 10, Township 24 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6684: (Continued from October 31, 1979, Examiner Hearing)
- Application of CO₂-In-Action, Inc. for creation of a new carbon dioxide gas pool and special pool rules, Harding County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the North Bueyeros-Santa Rosa CO₂ Gas Pool and the promulgation of special pool rules therefor, including a provision for 40-acre spacing and proration units. Said pool would comprise all or parts of Sections 1 thru 4, Township 20 North, Range 30 East, and Sections 8, 9, 10, 15, 16, 17, 20, 21, 22, 27, 28, 32, 33 and 34, Township 21 North, Range 30 East.
- CASE 6722: Application of Lloyd Davidson for an unorthodox oil well location, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of his Santa Fe Pacific Well No. 1, a Gallup-Entrada-Dakota test 960 feet from the South line and 1230 feet from the East line of Section 29, Township 16 North, Range 6 West, the SE/4 SE/4 of said Section 29 to be dedicated to the well.
- CASE 6723: Application of Merrion & Bayless for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SW/4 of Section 27, Township 24 North, Range 2 West, South Blanco-Pictured Cliffs Pool, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6713: (Continued from October 31, 1979, Examiner Hearing)
- Application of Depco Inc. for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the White Ranch Unit Area, comprising 18,962 acres, more or less, of State, Federal, and fee lands in Townships 12 and 13 South, Ranges 29 and 30 East.
- CASE 6724: Application of Coquina Oil Corporation for a non-standard gas proration unit and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 660 feet from the South line and 1650 feet from the East line of Section 7, Township 19 South, Range 32 East, Lusk-Morrow Gas Pool, the S/2 of said Section 7 to be dedicated to the well as a non-standard 320-acre proration unit.
- CASE 6725: Application of Tenneco Oil Company for three non-standard gas proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 291.23-acre non-standard gas proration unit comprising the W/2 of Section 6 and the NW/4 of Section 7, a 347.58-acre unit comprising the W/2 of Section 19 and the NW/4 of Section 30, and a 375.17-acre unit comprising the SW/4 of Section 30 and the W/2 of Section 31, all in Township 29 North, Range 8 West, Basin-Dakota Pool, each unit to be dedicated to a well to be drilled at a standard location thereon.
- CASE 6726: Application of Tesoro Petroleum Corporation for a waterflood project, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the South Hospah-Upper Sand Oil Pool by the injection of water into the Upper Hospah Sands through three wells located in Units E and M of Section 5 and Unit I of Section 8, Township 17 North, Range 8 West. Applicant further seeks an administrative procedure for expansion of said project.
- CASE 6727: Application of Conoco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in its Anderson Ranch Unit Well No. 8 located in Unit I of Section 11, Township 16 South, Range 32 East, Anderson Ranch Field. Applicant would dispose into the Wolfcamp, Mississippian, and Devonian formations in the overall interval from 9775 feet to 13,620 feet through selective perforations.
- CASE 6728: Application of Conoco Inc. for pressure maintenance expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Scarborough Eaves PM Project by the conversion of its Eaves "A" Well No. 7 located in Unit J of Section 19, Township 26 South, Range 37 East, to water injection in the Yates-Seven Rivers formations.

CASE 6729: Application of Adams Exploration Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying Section 16, Township 20 South, Range 36 East, North Osado-Morrow Gas Pool, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6730: Application of Petroleum Development Corporation to limit 640-acre spacing, Eddy and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks an order limiting the applicability of the 640-acre spacing and well location rules for the Lusk-Morrow Gas Pool to the present boundaries of said pool so that wells drilled nearby but outside the pool would be governed by Rule 104 of the Division's Rules.

CASE 6731: Application of Petroleum Development Corporation for a non-standard gas proration unit and an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 660 feet from the North and West lines of Section 13, Township 19 South, Range 31 East, Lusk-Morrow Gas Pool, the N/2 of said Section 13 to be dedicated to the well as a non-standard 320-acre proration unit.

CASE 6709: (Continued from October 31, 1979, Examiner Hearing)

Application of HNG Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 16 South, Range 35 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Memo

From
D. S. NUTTER
CHIEF ENGINEER

To Florence

Please send Cliff
Atkinson, Exxon's
Alleg. lawyer, a
marked copy of the
Nov. 14 docket. He is
interested in Case
6709, HNG.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico
31 October 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of HNG Oil Company for
compulsory pooling, Lea County,
New Mexico.

CASE
6709

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:

Ernest L. Padilla, Esq.
Legal Counsel for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (605) 471-2462
Santa Fe, New Mexico 87501

MR. STAMETS: We'll call next Case 6709.

MR. PADILLA: Application of HNG Oil Com-

pany for compulsory pooling, Lea County, New Mexico.

MR. STAMETS: The Division has received
a request this case be continued to the November 14th Exa-
miner Hearing, and it will be so continued.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (SOS) 471-2462
Santa Fe, New Mexico 87501

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, Certified Shorthand Reporter,
DO HEREBY CERTIFY that the foregoing and attached Transcript
of Hearing before the Oil Conservation Division was reported
by me; that the said transcript is a full, true, and correct
record of the hearing, prepared by me to the best of my
ability from my notes taken at the time of the hearing.

Sally W. Boyd C.S.R.
Sally W. Boyd, C.S.R.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the examiner hearing of Case No. 6709,
heard by me on 10-31-1979.

Richard R. Stewart, Examiner
Oil Conservation Division

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (SOS) 471-2482
Santa Fe, New Mexico 87501

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico
31 October 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of HNG Oil Company for) CASE
compulsory pooling, Lea County,) 6709
New Mexico.)

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:

Ernest L. Padilla, Esq.
Legal Counsel for the Division
State Land Office Bldg.
Santa Fe, New Mexico 87503

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (SSE) 471-3482
Santa Fe, New Mexico 87501

1 MR. STAMETS: We'll call next Case 6709.

2 MR. PADILLA: Application of HNG Oil Com-
3 pany for compulsory pooling, Lea County, New Mexico.

4 MR. STAMETS: The Division has received
5 a request this case be continued to the November 14th Exa-
6 miner Hearing, and it will be so continued.

7
8 (Hearing concluded.)
9

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (501) 471-2462
Santa Fe, New Mexico 87501

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REPORTER'S CERTIFICATE

I, SALLY W. BOYD, Certified Shorthand Reporter,
DO HEREBY CERTIFY that the foregoing and attached Transcript
of Hearing before the Oil Conservation Division was reported
by me; that the said transcript is a full, true, and correct
record of the hearing, prepared by me to the best of my
ability from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 19
heard by me on 19.

Oil Conservation Division, Examiner

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
3020 Plaza Blanca (S.B.) 471-2462
Santa Fe, New Mexico 87501

Dockets Nos. 42-79 and 43-79 are tentatively set for November 14 and 28, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 31, 1979

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 6706: Application of Consolidated Oil & Gas, Inc. for alternate filing requirements under the Natural Gas Policy Act of 1978, San Juan, Rio Arriba, and Sandoval Counties, New Mexico. Applicant, in the above-styled cause, seeks an order adopting alternate filing requirements under the Natural Gas Policy Act of 1978 whereby infill wells drilled in the Blanco Mesaverde and Basin-Dakota Pools pursuant to the pool-wide infill drilling findings and rules promulgated for said pools by Division Orders Nos. R-1670-T and R-1670-V, respectively, would qualify as new onshore production wells.

CASE 6707: Application of Gulf Oil Corporation for a unit agreement, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Southeast Bisti Unit Area, comprising 7,048 acres, more or less, of State and Federal lands in Townships 24 and 25 North, Range 10 West.

CASE 6708: Application of Doyle Hartman for an unorthodox well location, non-standard proration unit, and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard proration unit comprising the SW/4 NE/4 and SE/4 NW/4 of Section 36, Township 24 South, Range 36 East, Jalmat Gas Pool, to be dedicated to a well to be drilled at an unorthodox location 2310 feet from the North line and 1650 feet from the East line of said Section 36; applicant further seeks a waiver of existing well spacing requirements and a finding that the drilling of said well is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6695: (Continued from October 17, 1979, Examiner Hearing)

Application of Millard Deck Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard gas proration unit comprising the NE/4 NW/4 and NW/4 NE/4 of Section 36, Township 24 South, Range 36 East, Jalmat Gas Pool, to be dedicated to a well to be drilled at a standard location thereon.

CASE 6709: Application of HNG Oil Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 16 South, Range 35 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6710: Application of ARCO Oil and Gas Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Blinbry and Montoya production in the wellbores of the following wells on its State Y Lease: No. 3 located in Unit B, No. 6 located in Unit H, and No. 7 located in Unit A, all in Section 25, Township 25 South, Range 37 East.

CASE 6711: Application of Sun Oil Company of Delaware for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Mississippian test well to be located 660 feet from the North and East lines of Section 27, Township 14 South, Range 37 East, the E/2 of said Section 27 to be dedicated to the well.

CASE 6712: Application of Sun Gas Company for approval of infill drilling and simultaneous dedication, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well spacing requirements and a finding that the drilling of its N.M. Federal "N" Well No. 6-E to be located in Unit P of Section 6, Township 30 North, Range 12 West, Basin-Dakota Pool, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6713: Application of Depco Inc. for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the White Ranch Unit Area, comprising 18,962 acres, more or less, of State, Federal, and fee lands in Townships 12 and 13 South, Ranges 29 and 30 East.

CASE 6684: (Continued from October 2, 1979, Examiner Hearing)

Application of CO₂-In-Action, Inc. for creation of a new carbon dioxide gas pool and special pool rules, Harding County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the North Bueyeros-Santa Rosa CO₂ Gas Pool and the promulgation of special pool rules therefor, including a provision for 40-acre spacing and proration units. Said pool would comprise all or parts of Sections 1 thru 4, Township 20 North, Range 30 East, and Sections 8, 9, 10, 15, 16, 17, 20, 21, 22, 27, 28, 32, 33 and 34, Township 21 North, Range 30 East.

CASE 6714: Application of Jake L. Hamon for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Morrow test well to be drilled 660 feet from the South and West lines of Section 20, Township 20 South, Range 36 East, North Osado-Morrow Gas Pool, the S/2 of said Section 20 to be dedicated to the well.

CAMPBELL AND BLACK, P.A.

LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
PAUL R. CALDWELL

POST OFFICE BOX 2208
JEFFERSON PLACE
SANTA FE, NEW MEXICO 87501
TELEPHONE (505) 988-4421

October 4, 1979

Mr. Joe D. Ramey
Division Director
Oil Conservation Division
New Mexico Department of Energy & Minerals
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Application of HNG Oil Company for Compulsory
Pooling, Lea County, New Mexico

Dear Mr. Ramey:

Enclosed in triplicate is the application of HNG Oil Company
in the above-referenced matter.

The applicant requests that this matter be included on the
docket for the examiner hearing scheduled to be held on
October 31, 1979.

Very truly yours,


William F. Carr

WFC:lr

Enclosures

cc: Mr. Raymond Parker

BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

OIL CONSERVATION DIVISION
SANTA FE

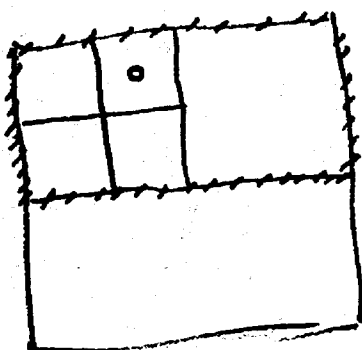
IN THE MATTER OF THE APPLICATION
OF HNG OIL COMPANY FOR
COMPULSORY POOLING
LEA COUNTY, NEW MEXICO

CASE 6209

APPLICATION

Comes now, HNG OIL COMPANY, by and through its under-
signed attorneys and, as provided by Section 70-2-17, New Mexico
Statutes Annotated, 1978 Compilation, hereby makes application
for an order pooling all of the mineral interests in the
Pennsylvanian formation in and under the N/2 of Section 33,
Township 16 South, Range 35 East, N.M.P.M., Lea County, New
Mexico, and in support thereof would show the Commission:

1. Applicant is the owner of 50.0% of the working
interest in and under the N/2 of said Section 33, and
applicant has the right to drill thereon.
2. Applicant proposes to dedicate the above-referenced
pooled unit to a Morrow test well to be drilled at
an orthodox location 660 feet from the North line
and 1980 feet from the West line of said Section 33.
3. Applicant has sought and obtained either voluntary
agreement for pooling or farm-out from all other working
interest owners in the N/2 of said Section 33 except
Exxon Company, U.S.A., owners of a 50.0% working
interest.



NE/4:

HNG 33.2986%

Tom Ingram 33.567%

Sal West 25.3507%

Michael Shaver 8.0000%

incorrect

4. Said pooling of interest and well completion will avoid the drilling of unnecessary wells, will prevent waste and will protect correlative rights.

5. In order to permit the applicant to obtain its just and fair share of the oil and gas underlying the subject lands, the mineral interest should be pooled, and applicant should be designated the operator of the well to be drilled.

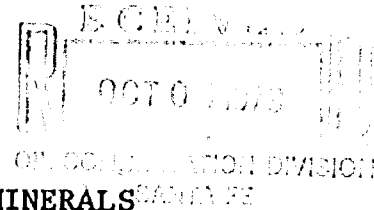
WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as required by law the Division enter its order pooling the lands, together with provisions designating the applicant as operator of the well, providing for applicant to recover its costs of drilling, equipping and completing the well, its costs of supervision while drilling, and after completion, including overhead charges, and a risk factor for the risk assumed by the applicant in drilling, completing and equipping the well, and making such other and further provisions as may be proper in the premises.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By William F. Carr
William F. Carr
Post Office Box 2208
Santa Fe, New Mexico 87501
Attorneys for Applicant

BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS



IN THE MATTER OF THE APPLICATION
OF HNG OIL COMPANY FOR
COMPULSORY POOLING
LEA COUNTY, NEW MEXICO

CASE 6709

APPLICATION

Comes now, HNG OIL COMPANY, by and through its under-
signed attorneys and, as provided by Section 70-2-17, New Mexico
Statutes Annotated, 1978 Compilation, hereby makes application
for an order pooling all of the mineral interests in the
Pennsylvanian formation in and under the N/2 of Section 33,
Township 16 South, Range 35 East, N.M.P.M., Lea County, New
Mexico, and in support thereof would show the Commission:

1. Applicant is the owner of 50.0% of the working
interest in and under the N/2 of said Section 33, and
applicant has the right to drill thereon.
2. Applicant proposes to dedicate the above-referenced
pooled unit to a Morrow test well to be drilled at
an orthodox location 660 feet from the North line
and 1980 feet from the West line of said Section 33.
3. Applicant has sought and obtained either voluntary
agreement for pooling or farm-out from all other working
interest owners in the N/2 of said Section 33 except
Exxon Company, U.S.A., owners of a 50.0% working
interest.

4. Said pooling of interest and well completion will avoid the drilling of unnecessary wells, will prevent waste and will protect correlative rights.

5. In order to permit the applicant to obtain its just and fair share of the oil and gas underlying the subject lands, the mineral interest should be pooled, and applicant should be designated the operator of the well to be drilled.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as required by law the Division enter its order pooling the lands, together with provisions designating the applicant as operator of the well, providing for applicant to recover its costs of drilling, equipping and completing the well, its costs of supervision while drilling, and after completion, including overhead charges, and a risk factor for the risk assumed by the applicant in drilling, completing and equipping the well, and making such other and further provisions as may be proper in the premises.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By


William F. Carr

Post Office Box 2208

Santa Fe, New Mexico 87501

Attorneys for Applicant

Called in by Bill Carr

10/2/79

HNG Oil Company

Compulsory Pooling

Pennsylvanian formation

N/2 33-165-35E

Well located 660/N + 1980/W

DRAFT

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6709

Order No. R- 6256

APPLICATION OF HNG OIL COMPANY FOR
COMPULSORY POOLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 14
19 79, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this January day of 19 80, the Division
Director, 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 Division has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, HNG Oil Company,
seeks an order pooling all mineral interests in the Pennsylvanian
formation underlying the N/2
of Section 33, Township 16 South, Range 35 East
NMPM, Shoe Bar Gas Field, Lea County, New
Mexico.

³
(2) That the applicant co-owns the NE/4 of said Section 32 with certain other parties and seeks an order pooling said quarter section with the NW/4 of said Section 33 which is owned by Exxon Company, USA to form a 320-acre gas spacing and proration unit to be dedicated to a well which applicant proposes to drill at a standard location for said unit at a point 660 feet from the North line and 1980 feet from the West line of said Section 33.

⁴
(3) That under applicant's proposal, HNG et al would own a 50 percent interest in the proposed unit and Exxon Company, USA would own a 50 percent interest.

⁵
(4) That according to the evidence in this case, approximately 1/3 of the potential reserves attributable to applicant's proposed well underly the NE/4 of Section 33 and approximately 2/3 of said reserves underly the NW/4 of the section.

⁶
(5) That Exxon Company, USA opposed the proposed unit at the hearing of this case and declared that it has budgeted, and is committed to, the drilling of an Atoka-Morrow test well at a standard location in the SW/4 NW/4 of Section 33, to which it would dedicate the W/2 of the Section.

⁷
(6) That approval of HNG's application in the instant case would impair ^{the} ~~Exxon Company, USA's~~ ^{correlative rights of Exxon, USA} inasmuch as ~~said Company would be contributing 2/3 of the reserves to the~~

⁸
(7) That alternate drilling and acreage dedication arrangements are available to HNG by which it can protect its correlative rights and those of its co-owners.

⁹
(8) That denial of the application will serve to protect correlative rights and will not cause waste, and such denial should be ordered.

IT IS THEREFORE ORDERED:

(1) That the application of HNG Oil Company for an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 33, Township 16 South, Range 35 East, NMPM, Shoe-Bar

well but would be credited with only 1/3 the well's production.

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Gas Field, Lea County, New Mexico, is hereby denied.

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

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

BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION
OF HNG OIL COMPANY FOR
COMPULSORY POOLING
LEA COUNTY, NEW MEXICO

OIL CONSERVATION DIVISION
SANTA FE
CASE 6209

APPLICATION

Comes now, HNG OIL COMPANY, by and through its under-
signed attorneys and, as provided by Section 70-2-17, New Mexico
Statutes Annotated, 1978 Compilation, hereby makes application
for an order pooling all of the mineral interests in the
Pennsylvanian formation in and under the N/2 of Section 33,
Township 16 South, Range 35 East, N.M.P.M., Lea County, New
Mexico, and in support thereof would show the Commission:

1. Applicant is the owner of 50.0% of the working
interest in and under the N/2 of said Section 33, and
applicant has the right to drill thereon.
2. Applicant proposes to dedicate the above-referenced
pooled unit to a Morrow test well to be drilled at
an orthodox location 600 feet from the North line
and 1980 feet from the West line of said Section 33.
3. Applicant has sought and obtained either voluntary
agreement for pooling or farm-out from all other working
interest owners in the N/2 of said Section 33 except
Exxon Company, U.S.A., owners of a 50.0% working
interest.

4. Said pooling of interest and well completion will avoid the drilling of unnecessary wells, will prevent waste and will protect correlative rights.

5. In order to permit the applicant to obtain its just and fair share of the oil and gas underlying the subject lands, the mineral interest should be pooled, and applicant should be designated the operator of the well to be drilled.

WHEREFORE, applicant prays that this application be set for hearing before the Division's duly appointed examiner, and that after notice and hearing as required by law the Division enter its order pooling the lands, together with provisions designating the applicant as operator of the well, providing for applicant to recover its costs of drilling, equipping and completing the well, its costs of supervision while drilling, and after completion, including overhead charges, and a risk factor for the risk assumed by the applicant in drilling, completing and equipping the well, and making such other and further provisions as may be proper in the premises.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By


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