

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 11, 1971

Examiner Hearing

----->
IN THE MATTER OF:)
Application of Corinne Grace)
for special gas/oil ratio)
limitation and pressure)
maintenance project, Chaves)
County, New Mexico.)
----->

Case No. 4563

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING



NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICOHearing Date AUGUST 11, 1971 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
HARLEY BEAVIS	HUMBLES	MIDLAND TEX
Clarence Hinkle	"	Roswell
Jason Kellahin	Kellahin & Fox	Santa Fe
R. I. Kepke	Anadarko Prod. Co.	Ft Worth, Tex.
C. W. Stumhoffer	Anadarko Prod. Co.	Fort Worth
Bill Kastle	Gulf Oil Co.	Midland
E. O. Bobo	Gulf Oil Co.	Midland
J. M. Welch	Northern Natural Gas Co.	Hobbs, New Mex
V. T. Lyon	Continental Oil Co	Hobbs
William J. LeMay	Grace & Shenandoah	Santa Fe
Nma S. Dalhaine	R. W. Byram & Co.	Santa Fe
R. M. Richardson	S. C. Hobbs	Roswell, Tex
James D. Janning	Janning Charles & Oppie	Roswell NM
Ed Wafford	SHENANDOAH OIL CORP.	FT. WORTH

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1 MR. NUTTER: Call the next case number 4563.

2 MR. HATCH: Case 4563. Application of Corinne
3 Grace for special gas/oil ratio limitation and pressure
4 maintenance project, Chaves County, New Mexico.

5 MR. STEVENS: Mr. Examiner, I am Don Stevens of
6 McDermott, Connelly and Stevens, appearing for the
7 applicant Corinne Grace.

8 With me is Mr. Harold Roberts appearing for Mr. Blake
9 Grace who has an interest in the well.

10 He joins me at this time in asking the indulgence of the
11 commission one more time for extension, continuance
12 on this case until September 1.

13 Reason for the request is that previously it was felt that
14 it was unnecessary to have a new gas/oil ratio run on the
15 well in question, in that they felt that the project was
16 feasible.

17 However, in view of recent information that the gas cap
18 is advancing in the field from the West to the East beyond
19 this well, it could well be that in the opinion of the
20 applicant, that this well no longer is capable of producing
21 sufficient to make the project feasible.

22 As a consequence of this, by granting an extension until
23 September 1, it would give the applicant time to run the
24 gas/oil ratio test, make a possible determination of whether
25 the well will produce sufficient oil to be feasible.

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1 It could well be that it will not be feasible, and under
2 the circumstances, those circumstances, they would
3 normally go in with the rest of the field and hook up
4 with Phillips Petroleum, seal their casing head gas and
5 what little oil the well might make, but at this time,
6 they would like to have it on September 1, which is,
7 I understand, within the time that is within a proper time
8 for notice on the hearing, in order that they would start
9 the project as soon as possible, if it is feasible.
10 Now, we know we have asked for extensions twice before
11 in this case for various reasons, and time has passed,
12 but if it is not feasible, then some two to three months
13 would necessarily expire before a hook up could be made
14 with Phillips, a beneficial use be made of the well, and
15 the economic gain there from.
16 The economic factor is the principle reason for our request.

17 MR. NUTTER: Does anyone have any remarks to make
18 concerning the motion for continuance?

19 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox
20 and Eaton, appearing on behalf of Humble Oil and Refining
21 Company.

22 As he has indicated, this case has already been extended
23 twice, and Humble's representative and myself have been
24 up here twice on the case, and Humble is interested in
25 opposing the applicants.

1 Now, in talking with Don Stevens, we offer to agree to
2 extend this case until October 6.

3 Now, the reason that we suggested that date was that I
4 am going to be away from August 20 until September 6,
5 and I have reservations and everything made and other
6 people are involved and I can't very well get out of it.
7 Now, if there is going to be an Examiner hearing the
8 latter part of September, we would not object to being
9 set at that time, but we would prefer that it be set on
10 October 6, and that would suit the representative of
11 Humble better too, at that time.

12 MR. NUTTER: On October 6?

13 MR. HINKLE: October 6.

14 MR. NUTTER: Does the Commission have a tentative
15 hearing set for that date?

16 MR. HINKLE: That is what Don told me. I don't know.

17 MR. STEVENS: It is only a date I checked by, and
18 it is not specifically set for that day, but she thinks
19 it will be that date or within a week thereof.

20 MR. NUTTER: And you will be gone from August 20 until
21 September 6?

22 MR. HINKLE: Yes. Get back September 6.

23 MR. STEVENS: One is set for September 15.

24 MR. NUTTER: Let me check, just a few seconds delay
25 here while I check some dates.

1 Well, I have had a couple of firm dates here. There
2 wouldn't be a hearing on October 6, but there will be
3 one on September 29. How is that?

4 MR. HINKLE: That is all right.

5 MR. STEVENS: Of course, we would still like to have
6 it September 1.

7 MR. NUTTER: Well, I think we have to give some
8 consideration to the opposition here, to, and he has got
9 his reservations and everything.

10 Would the 29th be agreeable, then?

11 MR. STEVENS: Yes, sir.

12 MR. HINKLE: Yes.

13 MR. NUTTER: Case 4563, then, will be continued
14 to an Examiner hearing scheduled to be held at this place,
15 at this same place, at 9:00 o'clock A. M. on September 29,
16 1971, so the case will be continued to that date.

17 The hearing is adjourned.
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1 STATE OF NEW MEXICO)
2)
3 COUNTY OF BERNALILLO)

4 I, LINDA MALONE, Court Reporter, do hereby certify that
5 the foregoing and attached Transcript of Hearing before the
6 New Mexico Oil Conservation Commission was reported by me; and
7 that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill, and ability.

9
10 Linda Malone
11 Court Reporter

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I do hereby certify that the foregoing is
a complete record of the proceedings at
the Executive hearing of Case No. 4563
heard by me on 8/11, 1971.

[Signature], Executive
New Mexico Oil Conservation Commission

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

July 28, 1971

EXAMINER HEARING

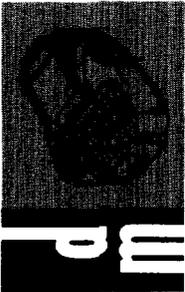
IN THE MATTER OF:)

Application of Corrine Grace for)
a special gas oil ratio limitations)
and pressure maintenance project,)
Chaves County, New Mexico.)

Case No. 4563

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING



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MR. UTZ: Case 4563.

MR. HATCH: Case 4563. Application of Corinne Grace
for special gas-oil ratio limitation and pressure maintenance
project, Chaves County, New Mexico.

And the applicant has requested that this case be
continued to August 11, 1971.

MR. UTZ: Case 4563 will be continued to 8/11/71.

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209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 30, 1971

EXAMINER HEARING

IN THE MATTER OF:)
)
Application of Corinne Grace for)
special gas-oil ratio limitation)
and pressure maintenance project,)
Chaves County, New Mexico.)

Case No. 4563

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING



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MR. UTZ: Case 4563.

MR. HATCH: Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico.

The Applicant has requested that this case be continued to the last Examiner Hearing in July.

MR. UTZ: Case 4563 will be continued to the 7-28 hearing.

MR. HATCH: Excuse me just a moment. May I ask, is there any objection to that one being continued?

MR. CHRISTY: Passed until July 28th.

MR. UTZ: Right.

MR. CHRISTY: Thank you.

J. R. MODRALL
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DANIEL A. SISK
LELAND S. SEDBERRY, JR.
ALLEN C. DEWEY, JR.
FRANK H. ALLEN, JR.
JAMES P. SAUNDERS, JR.
JAMES A. PARKER
JOHN R. COONEY
KENNETH L. HARRIGAN

PETER J. ADANG
DALE W. EK
CAMERON R. GRAHAM
DENNIS J. FALK
FARRELL L. LINES

LAW OFFICES OF
MODRALL, SPERLING, ROEHL, HARRIS & SISK

PUBLIC SERVICE BUILDING
P. O. BOX 2168
ALBUQUERQUE, NEW MEXICO 87103

JOHN F. SIMMS (1885-1954)
AUGUSTUS T. SEYMOUR
(1907-1965)

TELEPHONE 243-4511
AREA CODE 505

January 26, 1972

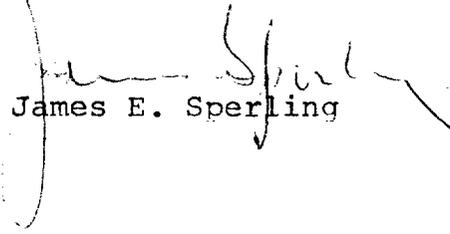
Mrs. Ida Rodriguez
Secretary to Director
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Ida:

Thank you very much for sending me the transcript
of hearing in Case No. 4563, Corinne Grace. It
has served my purposes and I am returning it to
you herewith.

Thanks again.

Best regards,


James E. Sperling

JES:jv

Enclosure

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

September 29, 1971
Examiner Hearing

IN THE MATTER OF:)

Application of Corinne Grace)
for special gas-oil ratio)
limitation and pressure)
maintenance project, Chaves)
County, New Mexico.)

Case No. 4563

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING



1 MR. UTZ: The hearing will come to order, please.
2 We have one continued case. We will call Case 4563 at this
3 time.

4 MR. HATCH: Case 4563. Application of Corinne Grace
5 for special gas-oil ratio limitation and pressure maintenance
6 project, Chaves County, New Mexico.

7 If the Examiner please, I think Mr. Bateman would
8 like to make an appearance in this case.

9 MR. BATEMAN: Ken Bateman of White, Gilbert, Koch
10 and Kelly, appearing on behalf of the applicants, request
11 that the case be continued to the hearing set for October 27.

12 MR. UTZ: Case 4563 will be continued till the
13 October 7 hearing. This is an Examiner hearing.

14 MR. BATEMAN: Thank you.
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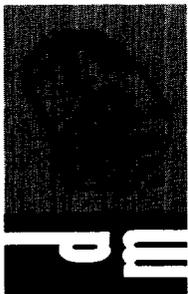
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1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO)

3 I, LINDA MALONE, Court Reporter, do hereby certify that
4 the foregoing and attached Transcript of Hearing before the
5 New Mexico Oil Conservation Commission was reported by me;
6 that the same is a true and correct record of the said
7 proceedings, to the best of my knowledge, skill and ability.

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12 Linda Malone
13 Court Reporter
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22 I do hereby certify that the foregoing is
23 a complete record of the proceedings of
24 the Executive hearing of case No. 4563
25 heard by me on September 19, 1977
Jane M. Malone Reporter
New Mexico Oil Conservation Commission



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

October 27, 1971
Examiner Hearing

IN THE MATTER OF:)

Application of Corinne Grace for)
special gas-oil ratio limitation)
and pressure maintenance project,)
Chaves County, New Mexico.)

Case No. 4563

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

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MR. UTZ: Case 4563.

MR. HATCH: Case 4563. Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico.

The Commission has received a request from the applicant to continue the case to November 10, which is the date the applicant has some other cases set for.

MR. UTZ: Case 4563 will be continued to 11/10.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 1, 1971

EXAMINER HEARING

IN THE MATTER OF:

Application of Corinne Grace
for special gas-oil ratio,
Chavez County, New Mexico

Case No. 4563

Application of Corinne Grace
for compulsory pooling,
Eddy County, New Mexico

Case No. 4619

Application of Corinne Grace
for compulsory pooling,
Eddy County, New Mexico

Case No. 4620

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING



MR. NUTTER: We would like to call Case No. 4563 which is the Application of Corinne Grace for special gas-oil ratio, Chavez, County, New Mexico; Case No. 4619, the Application of Corinne Grace for compulsory pooling, Eddy County, New Mexico; and Case No. 4620, Application for Corinne Grace for compulsory pooling, Eddy County, New Mexico.

MR. HATCH: Mr. Commissioner, I have received a request from the Applicant that these three cases be continued to January 5th, 1972.

MR. NUTTER: Cases 4563, 4619 and 4620 will be continued to the Examiner Hearing to be held at this same place at 9:00 o'clock A.M., January 5th, 1972.

The Hearing is adjourned.

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

November 10, 1971
Examiner Hearing

IN THE MATTER OF:)

Application of Corinne Grace)
for compulsory pooling, Eddy)
County, New Mexico.)

Case No. 4619

and)

Application of Corinne Grace)
for compulsory pooling, Eddy)
County, New Mexico.)

Case No. 4620

and)

Application of Corinne Grace)
for special gas-oil ratio)
limitation and pressure)
maintenance project, Chaves)
County, New Mexico.)

Case No. 4563

BEFORE: DANIEL S. NUTTER, EXAMINER

TRANSCRIPT OF HEARING



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MR. NUTTER: Call Case No. 4619.

MR. HATCH: Case 4619. Application of Corinne Grace for compulsory pooling, Eddy County, New Mexico.

It is my understanding that the Applicant would like this case to be continued to December 1, 1971.

MR. NUTTER: Well, we will call also Case No. 4620.

MR. HATCH: Case 4620. Application of Corinne Grace for compulsory pooling, Eddy County, New Mexico.

MR. NUTTER: And we will call also Case No. 4563.

MR. HATCH: Case 4563. Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico.

And the Applicants desire that each of these cases be continued to December 1, 1971.

MR. NUTTER: Cases No. 4619, 4620, and Case No. 4563 will all be continued to the Examiner Hearing scheduled to be held at this same place at 9:00 o'clock A.M., December 1, 1971.

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1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO)

3 I, LINDA MALONE, Court Reporter, do hereby certify that
4 the foregoing and attached Transcript of Hearing before the
5 New Mexico Oil Conservation Commission was reported by me;
6 that the same is a true and correct record of the said
7 proceedings, to the best of my knowledge, skill and ability.

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11 Linda Malone
12 Court Reporter

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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 4619, 4620, 4563
heard by me on Nov-10, 19 71.

[Signature] Examiner
New Mexico Oil Conservation Commission

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

March 1, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of Corinne Grace for
special gas-oil ratio limitation and
pressure maintenance project, Chaves
County, New Mexico.

Case No. 4563

BEFORE: Richard L. Stamets
Examiner

TRANSCRIPT OF HEARING

1 MR. STAMETS: We will now call Case 4563.

2 MR. HATCH: Case Number 4563 is the application
3 of Corinne Grace for special gas-oil ratio limitation and
4 pressure maintenance project, Chaves County, New
5 Mexico.

6 MR. STAMETS: I will call for appearances in
7 Case 4563.

8 MR. SPERLING: James E. Sperling, appearing for
9 the applicant; George Huuber, co-counsel.

10 MR. HINKLE: Clarence E. Hinkle of Roswell
11 appearing for the Humble Oil and Refining Company.

12 MR. STAMETS: Are there any other appearances
13 in this case?

14 (No response.)

15 MR. STAMETS: You may proceed, Mr. Sperling.

16 MR. SPERLING: We have Mr. LeMay as our first
17 witness.

18 (Whereupon William LeMay was sworn by Mr. Hatch.)

19 WILLIAM J. LeMAY,

20 appeared as a witness and having already been duly sworn,
21 testified as follows:

22 MR. SPERLING: Mr. Examiner, there are a couple
23 of preliminary matters that I would like to call to the
24 Commission's attention. The Case was advertised seeking
25 authority to produce Corinne Grace State Well Number One,

1 located in Unit A of Section 1, Township 15 South, Range
2 29 East, Double L-Queen Pool, Chaves County, New Mexico;
3 and to seek authority to strip the liquids. We wish to
4 delete that from the application, requesting authority to
5 strip the liquids in the proposed area.

6 The applicant simply seeks to use conventional
7 separation, gas separation procedures, insofar as the
8 produced gas is concerned.

9 The second matter which we wish to delete
10 from the application is that portion of it which seeks
11 to transfer an oil allowable from Well Number Two to Well
12 Number One. There has never been an allowable assigned
13 to the Number Two Well, and therefore it is requested that
14 it not be mentioned.

15 We request permission of the Examiner to
16 amend the application in those respects.

17 MR. STAMETS: I think that will be fine, Mr.
18 Sperling. I am sure that the equipment that will be used
19 will be determined during the course of your testimony.

20 MR. SPERLING: Yes, sir.

21 DIRECT EXAMINATION

22 BY MR. SPERLING

23 Q Would you state your name, please?

24 A William J. LeMay.

25 Q Where is your place of residence and what is your

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1 profession, Mr. LeMay?

2 A Consulting geologist in Santa Fe, New Mexico.

3 Q Would you give us a very brief resume of your professional
4 qualifications?

5 A Yes. These are a matter of public record in the
6 past and my qualifications have been accepted as an
7 expert witness.

8 Q Before this Commission?

9 A Yes, sir.

10 Q Now, are you familiar with the Double-L Queen Pool
11 in Chaves County, New Mexico? And specifically the
12 area in which the two wells which are the subject
13 of this application are located?

14 A Yes, I have made studies of the Double-L Queen and
15 have been involved over the course of the past two
16 years with various studies and I am sure the
17 Commission is aware of the cases that have come
18 before it involving the Double-L field and I do have
19 a background in that area.

20 Q In that connection, would you please refer to what
21 has been marked Exhibit #1 and explain the information
22 which appears there?

23 A Yes, sir. Exhibit 1 is a structure map and a reservoir
24 map of that portion of the Double-L Queen Pool and in
25 general show the dip to the east. This map is in

1 close agreement with other maps of the same area and
2 I don't think there is any problem as far as
3 structural configuration is concerned. The map shows
4 the area where the Queen sand is at this time and the
5 reservoirs also where Queen sand has produced gas.

6 The third area, the green area on the map, is
7 the oil rim down dip from the up dip gas. I think
8 it is important to note that the Double-L field is
9 a straight graphic trap with associated up dip gas
10 and as it was pointed out in Case Number 4352, both
11 the initial and the reviewed cases, that by withdrawing
12 oil from the oil rim, that gas and oil contact have
13 migrated down dip.

14 This was established in previous testimony in
15 Case 4352.

16 The fact that the pool now is classified by
17 Order Number R-3981 as an associated pool whereby
18 the withdrawal of the gas or oil is according to
19 Commission formula. The important thing to note on
20 this Exhibit #1 is the fact, and Exhibits #2 and #3,
21 likewise bring this out, the fact that initially the
22 Corinne Grace #1 Well, located in Unit A of Section 1
23 was established as an allowable well and a good well
24 and it did go to gas.

25 The other wells along the gas-oil contact are

1 within the zone and have a similar history. So, I
2 think it can be pointed out with certainty that this
3 gas cap has migrated down dip.

4 This Queen sand advance, and there are more
5 than one even though I only show one, because of its
6 relationship to this area that we are talking about,
7 had effectively separated. The trend runs basically
8 north-south and at this time, the Queen rock that
9 forms an effective barrier to both fluid and gas
10 migration has separated these various Queen trends.

11 This can be pointed out by the fact that within
12 two miles of the western edge of my map there is
13 water recovery from the Queen formation indicating
14 the separate occurrence of water and oil-gas
15 relationship.

16 In the same token to the east, approximately
17 within two miles of these Queen gas wells and down
18 dip from this, there is a relationship of oil and
19 gas indicating another trend.

20 Q Now, will you refer to Exhibits #2 and #3 and give
21 us whatever explanation they require?

22 A Exhibit #2 is a production map of the oil recovery
23 from the area of the Double-L field, it is brought
24 up to date as of 6/1/71. Subsequently, the production
25 there, which is not shown on the Exhibit, but the

1 point to be made is the higher recoveries from the
2 wells, namely in Sections 6, 15, 30, 31, 14, and 30.

3 The quality relationship is shown on Exhibit #2
4 and would not be affected by the additional
5 production that has taken place in the last six months.

6 Exhibit #3 reinforces my previous statement that
7 the well was a good well when it was initially drilled
8 and completed in December of 1969. December of 1969
9 production, shown on the bottom of Exhibit #3, and

10 the 1970 production is shown on the top. From
11 January through, roughly, October, the well produced
12 approximately 12,000 barrels of accumulative production
13 until October when you might say the gas hit and it
14 had a very high ratio, approximately sixty thousand
15 cubic feet of gas per barrel.

16 The well has not been producing since that point
17 and I think it is important to note the fact that the
18 well was an excellent quality well up to that point.

19 Q Were changes in the gas-oil ratio with reference to
20 these wells and the other wells similarly located
21 structurally, has there been a change in the chemical
22 composition or quality of the gas produced?

23 A In general, as was shown in the previous case, 4352,
24 there is an increase as you approach the oil rim and
25 the casing head gas within the oil rim is of a higher

1 volume than the gas further away from the oil rim.
2 Q Do you have anything further with reference to these
3 Exhibits, or with reference to any other matters
4 relating to your knowledge of the Double-L field?

5 A No, I think that's all I have.

6 MR. SPERLING: That is all I have from this
7 witness.

8 MR. STAMETS: Are there any questions of this
9 witness?

10 CROSS-EXAMINATION

11 BY MR. HINKLE

12 Q Mr. LeMay, referring to Exhibit #3, does that show
13 that your last production was in September of 1970?

14 A Correct.

15 Q And the gas-oil ratio at that time was what?

16 A Actually that's when the gas-oil ratio increased
17 radically. In September, it jumped from approximately
18 4,000 to 38,000 and then in October the GOR test was
19 taken and it was approximately 80,000.

20 Q You are familiar with the present rules governing this
21 pool?

22 A Yes.

23 Q And under the present rules, would this well be
24 classified an oil well or a gas well?

25 A Barring any further tests, from the October date and

1 considering the 60,000 to 1 GOR, that would classify
 2 the well as a gas well because of the 30,000 to 1
 3 Commission ruling as to whether it be classified gas
 4 or oil.

5 Q That rule provides for 30,000 to 1?

6 A That is correct.

7 Q Referring to your Exhibit #1, this shows the Humble
 8 Oil and Refining Company's acreage to the east of
 9 the Grace acreage; is that right?

10 A That is correct.

11 Q And you indicated that the brown area there by the
 12 Humble Well is located in the northwest of northwest of
 13 Section 8?

14 A Well, I would like to explain that a little. It has
 15 to do with the geology of the Queen reservoir and
 16 the Queen sand producing trend. Occasionally you
 17 will get a tight spot in the Queen reservoir that is
 18 usually quite small and there is no evidence of this
 19 particular tight spot there because you did produce
 20 a good well.

21 There is evidence in the brown section of Section
 22 36, so outside of the original pinch-out in both the
 23 East and the West, any brown spots just show the
 24 reservoir.

25 Q The brown spot in connection with the Humble Well

1 does not indicate it is not a good well?

2 A Not at all. The brown spots I could have put anywhere,
3 but it had to do with the fact that the reservoir
4 is not completely porous throughout the trend.

5 Q The Humble Well is a pretty good well?

6 A An excellent well, yes.

7 MR. HINKLE: That's all I have.

8 MR. STAMETS: Are there any other questions?

9 (No response.)

10 CROSS-EXAMINATION

11 BY MR. STAMETS

12 Q Is it your testimony that when the well was initially
13 completed, it stood below the gas-oil contact?

14 A Yes, that's my understanding.

15 Q I believe you stated that the reason that the gas
16 has migrated down dip and this well no longer could
17 be classified an oil well was because there was no
18 market for gas, or a limited market for gas or it
19 had not been determined and therefore the oil was
20 withdrawing faster than the gas migrated down dip;
21 is that correct?

22 A The reasons are multiple for the lack of development
23 of gas, I think a combination of factors are involved.

24 One, of course, was a market was not developed
25 satisfactorily and the price paid in the area was

1 quite low. Numerous contacts have been made to
 2 develop this gas market when this was classified a
 3 seaparate pool.

4 The only market that I am cognizant of in the
 5 field is casings head market which is working close
 6 to capacity and is not a good economic market for
 7 gas. Whether this particular gas in this rather large
 8 area could be developed economically, I think most
 9 operators at the present time will agree that it is
 10 not economical to develop the gas cap.

11 Q Will later witnesses develop some testimony as to
 12 the current capacity of the well and the effect what
 13 has been proposed will have on the reservoir?

14 A Yes, sir.

15 MR. STAMETS: I believe that is all I have. Are
 16 there any further questions of this witness?

17 (No response)

18 MR. STAMETS: If not, the witness will be excused.

19 (Witness excused.)

20 CHARLES E. MILLER,

21 was called as a witness and having already been duly sworn,
 22 testified as follows:

23

24

25

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DIRECT EXAMINATION

1
2 BY MR. SPERLING

3 Q Please state your name, residence and profession?

4 A Charles E. Miller, Hobbs, New Mexico. I am a
5 professional engineer and a Certified Petroleum
6 Geologist.

7 Q Have you on prior occasions testified before the
8 Commission so that your qualifications are a matter
9 of record?

10 A I have testified on several occasions.

11 MR. SPERLING: Are Mr. Miller's qualifications
12 accepted?

13 MR. STAMETS: They are.

14 Q (By Mr. Sperling) Mr. Miller, would you please refer
15 to what has been marked Exhibit #4 in this matter
16 and please explain what is portrayed on that Exhibit?

17 A Well, it primarily shows the top of the Queen sand
18 with a contour interval of twenty-five feet.

19 Q Was that map prepared by you?

20 A Yes, sir.

21 Q Give us a brief statement of your experience and
22 familiarity with the Double-L Queen pool; the work
23 you have done there?

24 A I was called in by Mr. and Mrs. Grace to supervise
25 the drilling of the well and I saw it from beginning

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1 to completion.

2 Q Which well?

3 A State Number 1.

4 Q And its location?

5 A The northeast corner of Section 1, Township 15 South,
6 Range 29 East.

7 Q And you were consulted in connection with the initial
8 drilling of that well?

9 A Yes, sir.

10 Q Have you done work in connection with the reservoir
11 of the Double-L Queen so that you have some professional
12 familiarity with the nature of the Queen sand and
13 other pertinent geological information?

14 A I have.

15 Q Would you give us a general history of Well Number 1,
16 State Well Number 1?

17 A This well was started in the latter part of 1969 and
18 drilled to -- I thought I had the total up here, but
19 I don't have it. We drilled --

20 Q This well was drilled when?

21 A In the very latter part of 1969, December.

22 Q Was the well cored?

23 A Yes, it was cored.

24 Q Tell us about the result of the drilling of the well.

25 Was substantial production encountered?

1 A Yes, it was.

2 Q At what intervals was it cored?

3 A I have it here. The beginning coring was at 1,926
4 feet and it was cored to a depth of 1,956 feet.

5 Q And give us the result of that core analysis?

6 A Well, I can read the entire thing.

7 Q I don't think that is necessary, give us the pertinent
8 material.

9 A The best part of the pay section according to the
10 core is from 1,930 feet to 1,931 feet. There was a
11 permeability of 1,400 milidarcie and a porosity of
12 40.6 percent.

13 From 1,931 to 1,932, there was a permeability
14 of 124 milidarcie and a porosity of 26.4 percent.

15 From 1,932 to 1,933, it was 150 milidarcie with
16 a porosity of 27 percent.

17 From 1,933 to 1,934, a permeability of 34
18 milidarcie and a porosity of 29 percent.

19 From 1,934 to 1,935, which would be the break
20 in the section, it was less than one-tenth of one
21 percent milidarcie and 7.7 percent porosity.

22 From 1,935 to 1,936, there was fifteen percent
23 permeability and 9.2 percent porosity.

24 From 1,936 to 1,938, there was six-tenths of
25 one percent permeability and 9.9 percent porosity.

1 From 1,937 to 1,938, there was 57 percent milidarcie
2 permeability and 20.6 percent porosity.

3 From 1,938 to 1,939, there was 17 milidarcie
4 and 25.3 percent permeability.

5 From 1,939 to 1,940, there/28 milidarcie and
6 the percentage of porosity was 24.5.

7 Q Would you classify the permeability and porosity as
8 quite satisfactory?

9 A Very much so. In the upper part where we had high
10 porosity when you picked up the core, it would almost
11 fall apart in your hands.

12 Q What was the first potential of the Number 1 State
13 Well?

14 A I can give it to you from memory, it was in the
15 neighborhood of 160 barrels a day, but part of it was
16 we were getting back frack oil.

17 Q What was the gas-oil ratio at that time?

18 A The gas-oil ratio at that time was 4,454 to 1.

19 Q Now, would you continue with the production history
20 and give us the well's course in chronological order?

21 A Well, I would need to refer to the curve. Here is
22 the curve, I think. I will say there was a gradual
23 decline with a comparative increase in gas throughout
24 the history of the well.

25 Now, I can give you the ratio as of August 1970

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1 which will give you some idea of the production at
2 that time.

3 Q All right.

4 A The test was made at 4,864 and the pressure showed
5 178 pounds. The gas-oil ratio was 88,107 and the
6 well made 10.43 barrels of oil in twenty-four hours.

7 Q What date was that?

8 A September 3rd, 1971.

9 MR. STAMETS: Could I have that date one more
10 time?

11 THE WITNESS: September 3rd, 1971.

12 Q (By Mr. Sperling) Now, on Exhibit #4 which you have
13 previously identified, there is shown a green line
14 and a red line which I take it to be lines illustrating
15 the cross sections?

16 A That's right. The green line is drawn primarily in
17 an east-west direction to just support testimony
18 given previously of this whole area having an east dip
19 with minor modulation due to slight fluctuation in
20 contact.

21 Q Have you prepared an exhibit which will illustrate
22 the cross section by reference to dates?

23 A Exhibit #5 is an east-west cross section also. The
24 purpose of this cross section was primarily just
25 another way of showing the general east dip.

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1 If you will notice the top of the Queen sand
2 shows almost a constant east dip without any
3 interruption -- that is an east-west dip.

4 Q And your reference point for the purpose of this
5 illustration is what?

6 A The top of the Queen sand.

7 Q Referring you to Exhibit #6 now?

8 A This cross section runs in a north-northeasterly, east
9 southwesterly direction and you will see by looking
10 at the point I have chosen, 2,000 feet above sea
11 level, the top of the Queen sand at this interval
12 varies very little from northwest to southeast.

13 Q Does that verify or confirm the conclusions you have
14 drawn and which are indicated by the contour lines
15 on both Exhibit #1, which was testified to by Mr.
16 LeMay, and your Exhibit #4?

17 A Yes. The dip is primarily to the east with a few
18 irregularities on the top of the Queen sand, but that
19 is normal. It does bear out the east-west dip
20 dipping from west to the east.

21 Q And you have prepared Exhibit #7, would you please
22 refer to that and give us your explanation of what
23 it shows?

24 A Well, it was drawn primarily to show the decline of
25 the Corinne Grace Number 1, and the adjacent Humble

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1 Well and also their Number 2 which is southeast
2 diagonally.

3 Q Just for the record, would you please identify the
4 location of the two Humble Wells to which you have
5 referred?

6 A The Humble Number 1 is in the northwest corner of
7 the northwest corner of Section 6; Humble Number 2
8 is in the southwest corner of the northwest corner
9 of Section 6. Both are 15 south, Range 30 East.

10 One thing I would like to point out on this
11 is the decline of Corinne Grace State Number 1 in
12 October in terms of production --

13 Q October of what year?

14 A 1970. The Humble Wells, Number 1 and Number 2, each
15 rose and they did not decline in proportion to State
16 Number 1.

17 Q So what you have done is prepare a graph to simply
18 project the decline, or the theoretical decline
19 for even though there was no production for State
20 Number 1 Well from the shut in time in October of
21 1970, so you could measure production in September
22 of 1971; is that correct?

23 A That is correct.

24 Q Whereas the production line as indicated for the
25 two Humble Wells represent actual production; is

1 that correct?

2 A Yes, and that information was taken from Commission
3 records.

4 Q What does that indicate to you, Mr. Miller, what
5 professional conclusion do you draw from the
6 information that you have collected there, keeping in
7 mind, of course, what you have already explained
8 concerning the dip, the down dip to the east?

9 What are your conclusions as an engineer as to
10 the production that might have been obtained from the
11 Grace Well if it had continued production as
12 distinguished from the production that might have
13 been anticipated from the two Humble Wells?

14 A If we can assume that the State Number 1 should have
15 been allowed to produce all the time from October
16 to the time it was shut in, I would say that the
17 additional oil would have been possibly half of this
18 figure in September of 1971 and the figure in October
19 which would be a difference of about between 28
20 barrels a day and 10.4 barrels a day.

21 Q So striking an average of that --

22 A We have lost some production there somewhere.

23 Q Now, in your opinion, has the gas cap which is
24 illustrated on a previous exhibit actually migrated
25 to the east?

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1 A Yes, that is the natural direction for the expansion
2 of the gas. It would not move to the west because
3 it would be closed off by the stratographic pinch
4 and the only direction it could move in would be to
5 the east.

6 Q And in your opinion, that has occurred?

7 A I believe it has.

8 Q Now, would you refer to what has been marked Exhibit
9 #8, Mr. Miller, and tell us what that is?

10 A These are production figures from the Humble Oil and
11 Refining Company Wells 1, 2, 3, and 4, and from the
12 Delpport-Robb wells 3, 5, and 8; do you wish me to read
13 them?

14 Q I don't think it is necessary, but do they show,
15 insofar as the two wells which are illustrated on
16 Exhibit #7 --

17 MR. HINKLE: Are you referring to Exhibit #3?

18 MR. SPERLING: Yes.

19 MR. HINKLE: I don't think we have a copy of
20 that.

21 MR. SPERLING: I'm sorry.

22 A If I may take a few minutes, there are several things
23 I would like to point out?

24 Q Go ahead.

25 A If you will follow me, you will note that on the

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1 Humble Well Number 1 production held up relatively
2 well from January of 1971 through August of 1971.

3 Likewise, Well Number 2 didn't show any appreciable
4 drop during that same period. This was also true of
5 Number 3 and Well Number 4.

6 In January of 1971, there was a production of
7 825 barrels and at the end of August, 1971, there
8 was a production of 481 barrels.

9 The Delpport-Robb in January of 1971 showed a
10 production of 797 barrels and in August, 1971, 531
11 barrels. The Number 2 in January showed 266 barrels
12 and then in August 177 barrels.

13 Now, the Delpport-Robb Number 3, which is down
14 in the southeast corner of Section 1, showed a production
15 of 1,889 barrels in January and a production of 2,170
16 barrels in August, but that is not an exactly true
17 figure because in July it showed only 1,484 barrels,
18 so I am assuming part of August's figure was leftover
19 from the previous month.

20 In other words, I think it is safe to say that
21 the Delpport-Robb Number 3 showed a decline of 1,809
22 barrels to approximately a little less than 1,500
23 barrels during that time.

24 Q Are all the wells identified on Exhibit #8 shown on
25 Exhibit #4, your Exhibit #4?

1 A Yes, they are.

2 Q Mr. Miller, have you concluded there has been drainage
3 from the land upon which the Grace Wells Number 1
4 and 2 are located?

5 A Yes. After October of 1970, the Grace Well was not
6 in position to protect itself and the oil went where
7 the point of least resistance was to a point where
8 it was being withdrawn and that was down structure.

9 Q Now, you have been employed by Mrs. Grace in connection
10 with the proposed installation that is really the
11 subject matter of this application; have you not?

12 A We have discussed it, it has to be a contract job.

13 Q Will you explain to us what is proposed?

14 A The proposal there is to produce the Number 1 well,
15 take the gas production through a compressor and
16 put that gas back into the Number 2 with none of the
17 gas being exposed.

18 In other words, we are not dissipating any gas,
19 just simply putting back all the gas we take into
20 the formation.

21 Q In the course of doing that, what type of separation
22 is proposed?

23 A What is proposed is to simply take such oil that may
24 come with the gas out of Number 2, run it through a
25 separator, the oil will go into a tank and the gas

1 will be circulated back into the Number 2 well.

2 Q In your opinion, will that result in any damage to
3 the reservoir?

4 A I have given a great deal of thought to that, and I
5 can't see, if you put back the same amount of gas you
6 take out, I don't see from where you are going to
7 damage the reservoir.

8 Q Would it also allow Mrs. Grace to cover at least a
9 portion of her fair share of the common source of
10 supply?

11 A It should.

12 Q Would it result in any damage to the correlative
13 rights of the offset operators?

14 A I can't see why it should. My answer would be no.

15 Q Do you have any information, any current information,
16 Mr. Miller, on the gas market situation in the area?

17 A No, to be real honest, I don't have any recent
18 information. We have gone through several phases in
19 trying to get a market for gas and we usually wind up
20 at the same place we started.

21 Q Do you mean you simply have not found a market?

22 A There is some gas being taken out, but that is
23 primarily to extract nitrogen.

24 Q Does the nitrogen content increase with increased
25 gas-oil ratio?

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1 A Well, I assume that it might, but that I can't answer
2 because I haven't had an analysis of the gas recently.

3 I have an analysis taken some time ago, but I
4 haven't had a recent analysis, I have no statistical
5 basis on which I can answer that question.

6 Q At that time, what was the nitrogen content? And
7 you might give us the date?

8 A March 2nd, 1970, and it was run by Conoco Oil Company
9 and the nitrogen content was 48.28; methane was 35.08;
10 ethane was 8.53; propane was 4.40; iso-butane was .70;
11 normal butane was 1.55; iso-pentane was .52; normal
12 pentane was .57; hexane was .37; making a total of
13 100 percent.

14 Q At the time of the initial production of gas in State
15 Number 1 Well, what was the gravity of oil?

16 A I took that myself and I believe I remember it to be
17 36.8.

18 MR. PORTER: Would you repeat the ethane content?

19 THE WITNESS: 8.53. If you wish, I will give you
20 a gas per thousand content.

21 MR. PORTER: No, that's fine.

22 MR. SPERLING: I believe that is all I have.

23 MR. STAMETS: Mr. Hinkle, do you anticipate
24 some rather lengthy cross-examination?

25 MR. HINKLE: No, I don't think I have too many

1 questions.

2 (Whereupon a recess was taken.)

3 (Case Number 4563 continues.)

4 MR. STAMETS: The hearing will come to order,
5 please.

6 MR. SPERLING: Mr. Examiner, before we proceed
7 with cross-examination, as is usually the case when there
8 is a recess, a lawyer thinks of something, so I would like
9 to ask a few further questions.

10 MR. STAMETS: You may proceed.

11 Q (By Mr. Sperling) I believe we neglected to put the
12 core analysis of the Number 2 Well, which might be
13 of value on the record.

14 You gave us the core analysis for the State
15 Number 1 Well, and I do not believe we covered the
16 Number 2 Well. I understand you do have core
17 information concerning the Number 2 Well.

18 A I have.

19 Q Would you please review that information for us now,
20 much in the same manner you did with the Number 1
21 Well?

22 A The report shows the core was started from 21 to 22
23 and the permeability was 76 milidarcie with a porosity
24 of 26.6 percent.

25

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1 From 22 to 23, 48 milidarcie with a porosity
2 of 24.8 percent.

3 From 23 to 24, 196 milidarcie with a porosity
4 of 26.4 percent.

5 From 24 to 25, a milidarcie of 1.3 and a porosity
6 of 13.4 percent.

7 From 25 to 26, a permeability of 40 milidarcie
8 and a porosity of 10.7 percent.

9 From 26 to 27, a permeability of 4 and a porosity
10 of 10.4.

11 From 27 to 28, a permeability of 202 milidarcie
12 and a porosity of 23.2 percent.

13 From 28 to 29, a permeability of 29 milidarcie
14 and a porosity of 24.5 percent.

15 From 1,929 to 1,930, a milidarcie of 17 and a
16 porosity of 23.1.

17 From 30 to 31, a permeability of 264 milidarcie
18 and a porosity of 21.6.

19 The core was lost from 31 to 32 and from that
20 point on, the permeability and porosity was quite
21 low.

22 Q What is the current status of the Number 2 Well?

23 A It is standing shut-in.

24 Q And I believe you explained before the proposal
25 with reference to the injection of gas from the Number

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1 1 into the Number 2; is that what you meant?

2 A That is what I meant. I have been told, I wasn't
3 aware of the fact, but I was told I had these reversed.
4 It is the Number 2 Well that we propose to put the
5 gas in, take it from the Number 1 Well and put it
6 into the Number 2 Well.

7 But, let us not forget the old saying: "To err
8 is human, to forgive is divine."

9 MR. SPERLING: I would like to offer Exhibits
10 #1 through #8 at this time.

11 MR. STAMETS: Without objection, Applicant
12 Exhibits #1 through #8 will be admitted into evidence.

13 Are there any questions for this witness?

14 MR. HINKLE: Yes.

15 CROSS-EXAMINATION

16 BY MR. HINKLE

17 Q You just testified as to the status of the Number 2
18 Well; has it been treated?

19 A Yes, it was treated.

20 Q Was there a potential test made of the Well?

21 A No, sir.

22 Q So, you don't know whether it is classified an oil
23 well or a gas well?

24 A No, it just stands shut in.

25 Q Was there gas when it was drilled in?

1 A Yes, sir. Now, I was not on that well, I was on a
 2 job over in Carlsbad at the time, so I cannot tell
 3 you from personal knowledge, but just from the reports
 4 and from what I have been told by the driller, they
 5 did core a small amount of oil sand.

6 Q Did you make any oil when they were drilling it; was
 7 there any indication of oil?

8 A From the report I got from the driller, they cut so
 9 much sand and it looked like gas, and then they cut
 10 a couple of more feet and it looked like oil sand,
 11 but that's just the driller's statement.

12 Q It is my understanding that the applicant has amended
 13 the application to delete the transfer of allowables
 14 from the Number 2 Well to the Number 1 Well; that is
 15 the oil allowable if it is capable of making oil?

16 A Well, we have no capability.

17 Q So that is not involved?

18 A No.

19 Q The present oil allowable is 160 barrels; isn't it?

20 A Yes.

21 Q This means that you would attempt to produce the
 22 Number 1 Well to 80 barrels or unlimited; what is
 23 the unlimited allowable for oil as far as the Number
 24 1 Well is concerned?

25 A Well, my reaction to your question is we should produce

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1 enough gas to at least produce oil at 10.43 barrels
2 in twenty-four hours.

3 Q Well, are you going to keep it to the allowable, the
4 produced allowable, regardless of the amount of gas
5 that would be produced?

6 A Well, I think it would be reasonable because there
7 would be no waste of gas, so the amount of gas we
8 make is immaterial.

9 Q The point I am trying to make is what you are proposing
10 to do as far as the oil allowable is concerned on
11 the Number 1 Well. In other words, if it is capable
12 of making 160 barrels, do you want to produce 160
13 barrels, or are you going to reduce it to 80 barrels?

14 A That's really a hypothetical question because we are
15 not capable of producing 160 barrels.

16 Q Do you think it is capable of producing 80 barrels?

17 A No, I do not because tests taken prior to the last one
18 showed 28 barrels and the last one showed 10. So we
19 were satisfied that we lost quite a bit of oil from
20 drainage and we wouldn't get it back, but we would
21 like to get back what we have left.

22 Q In other words, if you produced all the oil it will
23 make in a day, it is not likely to be much more than
24 28 barrels?

25 A With wishful thinking, it would be 28 barrels.

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1 Q Whatever the gas-oil ratio is you will inject gas
2 back into Number 2?

3 A Yes, sir.

4 Q And have you made a study to determine how much power
5 capacity and so forth would be necessary?

6 A I made a preliminary study, Mr. Hinkle, but it is my
7 understanding that Mr. and Mrs. Grace want to lease
8 a compressor.

9 Q Do you think it is practical to do what you are
10 requesting?

11 A Well, that is really beside the point as far as my
12 testimony is concerned, I think.

13 Q In your opinion, will the injection of gas into the
14 Number 2 Well be an effective pressure maintenance
15 project?

16 A It might be, but that's not its intended purpose. I
17 can't see really why it would if we don't put any
18 more gas in than we take out.

19 Q Do you have any idea or an informed opinion as to the
20 pressure required to inject gas into the Number 2
21 Well?

22 A I have some bottom hole pressure we took just a week
23 ago. The bottom hole pressures were taken on February
24 22nd, 1972, and the pressure on the Number 1 Well,
25 taken at a depth of 1,925 feet, we believe was plus

1 1,936 and the bottom hole pressure was 273 pounds.

2 We took a test on the Number 2 Well at a depth
3 of 1,925 feet and we believe it was plus 1,938 and
4 the bottom hole pressure was 321 pounds.

5 Q That it would take?

6 A It might exceed that, but not by too much.

7 MR. HINKLE: That's all I have.

8 CROSS-EXAMINATION

9 BY MR. STAMETS

10 Q Mr. Miller, based on the Commission's last order on
11 this pool, to your knowledge were some of the wells
12 in there reclassified from oil to gas?

13 A I'm sorry, but I missed the last hearing and I am not
14 familiar with it.

15 Q In other words, if any wells were classified as gas
16 wells, you would have no knowledge of what is being
17 done with the gas?

18 A Well, the last time I made a trip to the field, there
19 wasn't very much being done with it. There was one
20 line in there, but we are tied in.

21 Q Could you tell me what attempts have been made to get
22 gas connections for the Number 1 Well?

23 A No, I don't believe I can. I know there have been
24 several attempts to get a line, one line in --

25 MR. PORTER: In connection with that, have there

1 been concerted efforts by the various producers, if a pool
 2 was dry to get purchasers in there in a cooperative
 3 effort?

4 THE WITNESS: Not to my knowledge. I know Mr.
 5 McCellan has made considerable effort, concerted efforts,
 6 but as far as all of them are concerned, I don't have any
 7 knowledge.

8 Q (By Mr. Stamets) Mr. Miller, if your records reflected
 9 that gas from the offset well was being sold to a
 10 purchaser, would that indicate that the market was
 11 available in the area?

12 A I think perhaps a very limited market. I don't know
 13 whether they have room for any additional gas to go
 14 out of there or not, I know a line does go up north.

15 Q Assuming that for the time being there was a market
 16 for this gas and under the pool rules, 160 acres may
 17 be assigned to gas wells in this pool, and assuming
 18 here again that 160 acres could be assigned to this
 19 well, would the gas allowable that would be assigned
 20 in that case and if that allowable was 640 MCF per
 21 day, would that be a sufficient amount of gas to
 22 allow you to produce all the oil this well would
 23 make?

24 A I believe that's right -- no, no, it wouldn't take
 25 care of it all.

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1 Q How much would it take care of approximately?

2 A Well, I showed a little over 900,000 cubic feet
3 on the last test and with 600,000, that would take
4 about two-thirds of it; wouldn't it?

5 Q Does Mrs. Grace have enough acreage in the area to
6 assign 160 acres units?

7 A Altogether, there are 640 acres. Let's see, in the
8 east half of the southeast and the southeast of the
9 northeast is Delpport and figuring real quickly, there
10 are 40 acres in the southeast of the southwest, so
11 that leaves 160 acres.

12 Q It would require nonstandard use?

13 A Yes, it would leave 460 acres in the unit.

14 Q I believe it has been testified to by yourself and
15 the previous witness that the gas has migrated from
16 west to east in this field; isn't that the normal
17 process in an expanding gas type reservoir?

18 A Yes, we didn't say it wasn't; we think it is.

19 Q If this installation was put into effect, would you
20 anticipate there would be any oil migrating up dip
21 toward the Number 1 Well?

22 A That would depend quite a bit upon the differential
23 of your pressures. If we have enough injection in
24 there, and the pressure holds the oil from migrating
25 back by gravity, it would seek its natural level.

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1 I think the bottom hole pressures of some of the
2 set wells are not much higher right now than ours.

3 Q You don't feel there would be any significant
4 migration of oil up dip?

5 A Not with pressure. When it is injected, it would
6 seem logical that it would hold the oil down in place.

7 Q What volume of gas do you anticipate on a daily basis?

8 A I can't answer that because I haven't talked to the
9 contractor. I don't know what size compressor he is
10 going to move in.

11 Q Do you anticipate measuring gas at all?

12 A Well, we can if you want us to, but I didn't see any
13 reason to as long as we were just circulating it.

14 Q Do you anticipate any effect whatsoever on the offset
15 wells as a result of this operation?

16 A No. Frankly, that is not the purpose of circulating
17 the gas, what we are trying to do is reclaim what
18 oil there is left under our lease which we think is
19 rightfully ours.

20 MR. STAMETS: Are there any additional questions
21 of this witness?

22 (No response.)

23 MR. STAMETS: If not, he will be excused.

24 (Witness excused.)

25 MR. SPERLING: Mr. Commissioner, Mr. Miller has

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1 testified concerning recent bottom hole pressure tests,
2 these have been marked and the graphs have been marked,
3 and they might be helpful if we put them in as an exhibit.

4 They have been marked as Exhibits #9 and 9a.

5 MR. STAMETS: Are there any objections to
6 Applicant's Exhibits #9 and #9a?

7 (No response.)

8 MR. STAMETS: If not, they will be made part of
9 the record. Mr. Sperling, do you have any additional
10 testimony?

11 MR. SPERLING: Yes.

12 JOHN C. BYERS,
13 was called as a witness and having already been duly sworn,
14 testified as follows:

15 DIRECT EXAMINATION

16 BY MR. SPERLING

17 Q Will you please state your name, your place of
18 residence, and your profession?

19 A John C. Byers, I am a resident of Lubbock, Texas,
20 and a professional engineer.

21 Q Have you on previous occasions testified before the
22 New Mexico Oil Conservation Commission?

23 A Yes, sir, we have.

24 Q And are your professional qualifications a matter of
25 record?

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1 A They are.

2 MR. SPERLING: Are Mr. Byers qualifications
3 satisfactory?

4 MR. STAMETS: Are you a petroleum engineer?

5 THE WITNESS: Yes.

6 MR. STAMETS: They are acceptable, thank you.

7 Q (By Mr. Sperling) Mr. Byers, have you had an
8 opportunity to be present during the testimony presented
9 on behalf of the applicant in this matter?

10 A Yes, we have.

11 Q Have you reviewed the exhibits which have been
12 presented in support of this application?

13 A Yes.

14 Q Have you reached any professional conclusion based
15 upon -- let me strike that and let me ask you this:
16 Have you made any studies other than the information
17 which is contained in the exhibits and the testimony
18 presented to the Commission on the Double-L Queen
19 Pool in Chaves County?

20 A We have utilized only material prepared by others.

21 Q In your opinion, has that information been sufficient
22 for you to form an expert opinion as to the matters
23 which have been testified to here?

24 A I think so.

25 Q Let me refer you to what has been marked Exhibit #7

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1 in this matter, and introduced into evidence; you
2 say that you have previously examined this exhibit?

3 A Yes.

4 Q And you are familiar with the location of the wells
5 with regard to one to the other as shown in Exhibit
6 #4 for the Applicant?

7 A Yes, sir.

8 Q Now, based upon the information and testimony that
9 you have heard, and the information as shown in these
10 exhibits which you have reviewed, what conclusions
11 have you drawn with reference to this pool and
12 particularly with reference to what has occurred
13 insofar as the Corinne Grace State Well Number 1 is
14 concerned?

15 A The gas-oil contact as shown in the structural map
16 is certainly based on top of the sand. I think you
17 can also notice from the core analysis that mobility
18 of fluid in the uppermost of these two sections is
19 substantially greater than those in the lower section.

20 I think what we have experienced in this is a
21 substantial expansion of the gas cap particularly
22 along the upper member resulting in a progressively
23 higher gas-oil ratio.

24 In the Number 1 Well, there is diminished pressure
25 evident from the bottom hole pressure and the Number 2

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1 Well has certainly evidenced that also. The two are
2 in communication within the reservoir by some
3 mechanism.

4 If the mobility is that high in the upper zone,
5 then there is in all likelihood an oil column.
6 Therefore, if we inject gas into the Number 2 Well, I
7 think we can develop mobility of this gas through both
8 the upper and the lower members.

9 Certainly we should have some substantial recovery
10 from the Number 1 Well area.

11 Q Now, have you reached any conclusion based upon the
12 information made available to you as to what the
13 effect, the adverse effect, if any, would be upon the
14 reservoir by following the procedures which have been
15 outlined?

16 A I think the effects will be strictly local and I
17 think we may well introduce ourselves to the process
18 of cycling gas along the up dip edge of the reservoir
19 which may eventually serve to improve recovery from
20 the total reservoir.

21 I think what we are doing here is introducing a
22 really important project into the reservoir for the
23 recovery of oil. If it is successful here, the same
24 process would be applicable to the remaining reservoir.

25 Q Do you anticipate any adverse effects by the procedure

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1 proposed to the offset operators' drill rights'?

2 A Not so long as we do not diminish the pressure in
3 the Number 1 Well to substantially below that pressure
4 to the east offset.

5 We do not anticipate this likelihood because we
6 are dealing with a uniform withdrawal from the two
7 wells.

8 Q You understand this proposed system to be a closed
9 system; do you not, utilizing all the gas?

10 A Yes. And I would like to interject my own opinion
11 here, I strongly feel that if we are to know what we
12 are doing, all the gas cycled must be metered.

13 Q Do you have any further observations on this problem?

14 A Probably a lot, but they might be lengthy and
15 irrelevant.

16 MR. SPERLING: That is all I have of this witness.

17 MR. HINKLE: I have no questions.

18 MR. STAMETS: Are there any questions?

19 (No response.)

20 CROSS-EXAMINATION

21 BY MR. STAMETS

22 Q Mr. Byers, in your opinion, should any precaution
23 be taken on the Number 2 Well to insure that the gas
24 will not escape to any other zone?

25 A I think certainly normal completion requirement

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1 practices have got to be taken. Other than that, we
2 assume we have a good cement job, properly tested
3 prior to the completion of the well and certainly
4 these should be verified.

5 I think the Commission records will indicate that
6 we did have a good cement job.

7 Q Do you feel that a gauge or a casing tuck would be
8 in order in this case?

9 A I think a gauge certainly, and I assume we are going
10 to inject through a tuck and under a packer.

11 Q I don't believe that has been testified to.

12 A I mean those are our thoughts, what we are thinking
13 in terms of.

14 MR. STAMETS: Are there any other questions of
15 this witness?

16 (No response.)

17 MR. STAMETS: If not, he can be excused.

18 (Witness excused.)

19 MR. STAMETS: Mr. Sperling, I would like to direct
20 a question to someone, I'm not sure who you can call back
21 on it. It is concerning injection under a packer and
22 through a tuck.

23 MR. SPERLING: Mr. Miller, I would assume, would
24 be best qualified at this point to answer that question.

25

1 CHARLES MILLER,
 2 was recalled as a witness and having already been duly sworn,
 3 testified as follows:

4 THE WITNESS: I can't see why it is necessary
 5 unless we prove we have a leaking casing job or something
 6 like that.

7 MR. STAMETS: Does anyone else have any questions
 8 at this point?

9 (No response.)

10 (Witness excused.)

11 MR. STAMETS: Do you have any further witnesses,
 12 Mr. Sperling?

13 MR. SPERLING: Yes, sir.

14 RICHARD STEINHORST,
 15 was called as a witness and having already been duly sworn,
 16 testified as follows:

17 DIRECT EXAMINATION

18 BY MR. SPERLING

19 Q Would you state your name, please?

20 A Richard Steinhorst.

21 Q What is your profession?

22 A I am a graduate petroleum engineer and a practicing
 23 consultant out of Lafayette, Louisiana.

24 Q Have you on prior occasions testified before this
 25 Commission?

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1 A I have not.

2 Q Would you give us a brief resume of your educational
3 background and experience with reference to your
4 profession?

5 A I was graduated from Oklahoma University with a
6 Bachelor of Science Degree in Petroleum Engineering.
7 I subsequently worked with a Texas company as a field
8 engineer, a district engineer and a senior division
9 petroleum engineer; and as an assistant drilling
10 production superintendent throughout the mid-continent
11 area.

12 I went to work for a British-American oil producing
13 company as an assistant general superintendent;
14 subsequently, a drilling superintendent in southern
15 Louisiana in offshore operations.

16 For the past thirteen years, I have been an active
17 consultant in the Gulf Coast and throughout the Texas
18 and mid-continent and eastern areas.

19 Q Thank you.

20 MR. SPERLING: Are Mr. Steinhorst's qualifications
21 accepted?

22 MR. STAMETS: He is qualified, yes.

23 Q (By Mr. Sperling) Have you had an opportunity to
24 review the exhibits that have been presented in
25 support of the application here today as well as to

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1 be present while testimony was presented?

2 A I have.

3 Q Now, without going through each one of these, Mr.
4 Steinhorst, would you please advise us as to whether
5 or not you have reached any conclusions as to what
6 the past history has been insofar as what has occurred
7 in the reservoir in which the Corinne Grace State
8 Lease, and specifically Corinne Grace Well Number 1,
9 is located?

10 A I believe evidence is already in the record indicating
11 that the well originally was either a gas-oil contact
12 or below the gas-oil contact at the top of the sand.
13 There has been a definite migration or expansion of
14 the gas cap across the well and down dip and,
15 subsequently, oil has migrated down dip and this well
16 has not produced the amount of oil that was in place
17 at the location at the time it was drilled.

18 Q You have heard outlined the procedure proposed consisting
19 of producing gas from the Number 1 Well and injecting
20 that same gas, the same quantity, into the Number 2
21 Well?

22 A I have.

23 Q Is it your opinion that such a procedure will be in
24 the interest of the recovery of oil from the location
25 in question?

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1 A This particular reservoir, I understand from
2 geological data furnished to me and from examining
3 production information, it appears that the particular
4 reservoir at this particular location will probably
5 not be completely produced under the present method
6 of production and the injection of gas up dip stands
7 to recover all which would not otherwise be recovered,
8 even though the reservoir is classified a gas reservoir
9 and is so produced.

10 Q Would the proposed procedure in your opinion result
11 in any damage to the correlative rights of any offset
12 properties?

13 A I think the only possibility would be if it was
14 excessive and this would be above what the Commission
15 has already determined as having been practical. Any
16 excessive removal of hydrocarbon from the Number 1
17 Well possibly could, but this is not too common.

18 In this particular instance, you are looking at
19 something which is commonly referred to in the
20 profession as attic oil recovery, up dip of oil which
21 cannot be recovered by any other means.

22 Q So it is your conclusion that it would not adversely
23 affect the correlative rights of the adjoining
24 operators?

25 A It would not.

1 MR. SPERLING: I think that is all.

2 MR. STAMETS: Are there any questions of this
3 witness?

4 (No response.)

5 CROSS-EXAMINATION

6 BY MR. STAMETS

7 Q Could this procedure actually benefit the offset
8 operator?

9 A Actually, it could, whether it would is something that
10 would have to be determined. But as long as they are
11 injecting up dip, it is going to pass the point of
12 the State Number 1 and it might be of immeasurable
13 benefit because any time you are moving something
14 down dip, you are not going to stop all at one point.

15 MR. STAMETS: Any other questions?

16 (No response.)

17 MR. STAMETS: If not, this witness may be excused.

18 (Witness excused.)

19 MR. SPERLING: That is all I have.

20 MR. STAMETS: Are you going to put in any
21 testimony, Mr. Hinkle?

22 MR. HINKLE: No testimony.

23 MR. STAMETS: Are there any other appearances
24 in Case Number 4563?

25 (No response.)

1 MR. STAMETS: Is there any correspondence, Mr.
2 Hatch?

3 MR. HATCH: No.

4 MR. HINKLE: I have a brief statement.

5 MR. STAMETS: Proceed.

6 MR. HINKLE: Humble does not object to bonafide
7 pressure projection by gas injection provided no undue
8 advantage is given to any operator and providing gas is
9 not injected into a producing formation. Humble is quite
10 doubtful at this stage of depletion that gas injection
11 will enhance recovery in the pool with only two wells being
12 involved.

13 Humble has no objection to the transfer of
14 oil and gas from one well to another as long as it does
15 not exceed the amount which the well would be allowed to
16 produce under the applicable rules.

17 Furthermore, Humble has no objection to
18 permitting the operator to exceed the gas-oil ratio
19 limitations so long as it puts the excessive gas produced
20 back into the reservoir.

21 In this case, if the Commission permits the
22 transfer of the allowable of the Number 2 Well, the Number
23 2 Well should be tested in the presence of Commission
24 representatives to show its capability of producing both
25 oil and gas, or either of them.

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1 The Commission should request the operator
2 make monthly reports with respect to the measured production
3 of the Number 1 Well and the reports should also show the
4 measured amount of gas injected into the Number 2 Well.

5 That's all, thank you.

6 MR. STAMETS: Do you have a statement, Mr.
7 Sperling?

8 MR. SPERLING: No, sir.

9 MR. STAMETS: Is there anything else in Case
10 Number 4563?

11 (No response.)

12 MR. STAMETS: If not, Case Number 4563 will be
13 taken under advisement.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
CONFERENCE ROOM, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
February 2, 1972

EXAMINER HEARING

IN THE MATTER OF:)
Application of Corrine Grace)
for special gas-oil ratio)
limitation and pressure)
maintenance project, Chaves)
County, New Mexico.)

Case No. 4563

BEFORE: Elvis A. Utz,
Alternate Examiner.

TRANSCRIPT OF HEARING

1 MR. UTZ: Case 4620 and Case 4563.

2 MR. HATCH: Case 4563: Application of Corinne Grace
3 for special gas-oil ratio limitation and pressure maintenance
4 project, Chaves County, New Mexico.

5 The applicant has requested each of these cases be
6 continued until March 1st, 1972.

7 MR. UTZ: The cases just mentioned will be continued
8 to March 6th--what is it?

9 MR. HATCH: March 1st.

10 MR. UTZ: March 1st, 1972 Examiner Hearing.

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
January 5, 1972

EXAMINER HEARING

-----)
IN THE MATTER OF:)

Application of Corinne Grace for)
special gas-oil ratio limitation)
and pressure maintenance project,)
Chaves County, New Mexico.)
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Case No. 4563

and

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IN THE MATTER OF:)

Application of Corinne Grace for)
compulsory pooling, Eddy County,)
New Mexico.)
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Case No. 4620

BEFORE: Daniel Nutter, Examiner

TRANSCRIPT OF HEARING

dearnley-meier reporting services

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MR. NUTTER: Case 4563.

MR. HATCH: Case 4563, Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico.

The applicant has requested the case be continued to February 2nd, 1972.

MR. NUTTER: In Case 4563, the Application of Corinne Grace, and Case 4620, in each of those cases, the Applicant has requested it be continued to February 2nd, and those cases will be continued to the Examined Hearing scheduled for 9 o'clock February 2nd.

The Hearing is adjourned.

