

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
MORGAN HALL, STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
February 16, 1972

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company
for a unit agreement, McKinley
County, New Mexico

a n d

Application of Tenneco Oil Company
for a pressure maintenance
project, McKinley County, New
Mexico.

CASE NO. 4664

CASE NO. 4665

BEFORE: Elvis Utz
Examiner

TRANSCRIPT OF HEARING

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1 MR. UTZ: The Hearing will come to order, please.
2 We will consolidate for the purpose of testimony, Cases 4664
3 and 4665.

4 Separate Orders will be written on each Case.

5 MR. HATCH: Case 4664, Application of Tenneco Oil
6 Company for a unit agreement, McKinley County, New Mexico.

7 Case 4664, Application of Tenneco Oil Company for
8 a pressure maintenance project, McKinley County, New Mexico.

9 MR. UTZ: Appearances?

10 MR. KELLY: Booker Kelly, of White Koch, Kelly,
11 and McCarthy of Santa Fe. We have two witnesses and ask
12 that they be sworn.

13 (Whereupon, the Applicant's two witnesses were
14 sworn by Mr. Hatch.)

15 MR. UTZ: Are there any other appearances in this
16 Case?

17 (No response.)

18 MR. UTZ: You may proceed.

19 MR. KELLEY: We are going to have two witnesses,
20 and since these Cases have been consolidated, Mr. Rial is
21 going to briefly go through some of the Exhibits on geology
22 and then Mr. Melnar will resume the stand and go through the
23 engineering pressure maintenance project.
24
25

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WILLIAM MELNAR,

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, profession and employer?

A My name is William Melnar, I am District Reservoir
Engineer for the Tenneco Oil Company, in Denver,
Colorado.

Q Have you previously qualified before the Commission as
an expert in the field of Petroleum Engineering?

A Yes, I have.

Q These two Applications have been consolidated, would
you briefly state what Tenneco seeks by the two
Applications?

A Tenneco is seeking approval of unit agreement and also
approval of a pressure maintenance project with
special unit rules, in the Lone Pine Dakota "D" unit
in McKinley County, New Mexico.

Q Referring to Exhibit 1, would you locate the unit on
the plat?

A Exhibit 1 is a location map of the Lone Pine field and
the proposed unit is shown on the Exhibit by black hash
lines.

Q Does Exhibit 1 show all of the wells within two miles of

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1 any injection wells and all of the offset operators?

2 A Yes. The gas injection wells are shown in green and
3 the water injection wells in red.

4 Q Can you give us, just briefly, a history of this
5 particular pool?

6 A The Lone Pine Dakota "D" pool was discovered with the
7 drilling completion of the Lone Pine Number 1 Well
8 located in the northwest of the northwest of Section
9 18, Township 17 North, Range 8 West.

10 It was completed in June of 1970, and after
11 discovery, rapid development followed. As of this
12 date, we have twenty-two producing oil wells and four
13 gas wells, and two temporarily abandoned wells.

14 Q Exhibit Number 2 is a copy of the proposed unit
15 agreement; is that correct?

16 A Yes, it is.

17 Q Would you point out to the Examiner, the Section and
18 page where the legal description of the unit is found?

19 A The legal description of the unit is shown on the
20 unit agreement on pages 2 and 3, in Section 2.

21 MR. KELLY: Mr. Examiner, do you wish the
22 legal description read into the record?

23 MR. UTZ: No, I don't think it is necessary. It
24 is in the form of an Exhibit?

25 MR. KELLY: Yes.

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1 MR. UTZ: What page?

2 THE WITNESS: Pages 2 and 3 of Section 2.

3 Q What structures are to be unitized?

4 A The unitized formations are defined in the unit

5 agreement on pages 3 and 4 of Section 2.

6 Q Now, the purpose of this unit agreement is to introduce

7 a pressure maintenance project; is that correct?

8 A Yes, it is.

9 Q What kind of lands are involved in the unit?

10 A The type of lands involved in the unit are shown on

11 Exhibit 3-B to the unit agreement and they are as

12 follows: Tracts 1, 2, and 3, and Federal 4 through 9,

13 are Indian Tracts and 10 through 12 are Fee lands.

14 Q Can you describe who the offset operators are?

15 A The offset operators are Tesoro Petroleum Company

16 and Kennedy.

17 Q Tenneco has all the rest of the acreage to the south

18 and west; is that basically correct?

19 A Yes, that is true.

20 Q And some part of the north portion is concerned with

21 other operators?

22 A That is correct.

23 Q And Tenneco will be the operator of the unit?

24 A That is correct.

25 Q Who are the other working interest owners in the unit?

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1 A Besides Tenneco, there is Tesoro, Beard and Gil,
2 and John Beard.

3 Q I assume you have agreements with all the working
4 interest owners?

5 A Yes, we do.

6 Q What is the situation as far as the Indian and the
7 U.S.G.S. land is concerned?

8 A We have preliminary approval for the unit agreement
9 from both the B.I.A., the Bureau of Indian Affairs,
10 and the U.S.G.S., and we have Exhibit Number 3 which
11 is a letter from the United States Department of
12 Interior, Geological Surveys, approving the unit
13 agreement -- giving preliminary approval.

14 Q Is that on behalf of the Bureau of Indian Affairs and
15 the U.S.G.S.?

16 A That is correct.

17 Q How about the Fee land?

18 A The Fee land is from Santa Fe and we have agreement
19 from them also.

20 Q And the unit agreement submitted with the Application
21 was amended by the U.S.G.S. and B.I.A.?

22 A Yes.

23 Q And those amendments are shown in Exhibit Number 2; is
24 that correct?

25 A That is correct.

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1 Q Do those amendments make any substantial changes or
2 just technical changes in the language?

3 A Primarily, technical changes, and clarification of
4 language.

5 Q Will you show where the tract participation formula
6 is shown in the unit agreement?

7 A The participation formula is found on page 12 of
8 Section 13 of the unit agreement and the formula is
9 based on our current production and is to be in effect
10 until the accumulative recovery of 3.21 million barrels
11 are recovered from the pool.

12 After this Phase 2 will come into effect and that
13 will be based on oil plus the equivalent gas acre fee.

14 Q Is the formula similar to other agreements that have
15 been approved by this Commission?

16 A I believe it is.

17 Q Would it be in the best interest of conservation and
18 prevention of waste and protection of correlative
19 rights to approve this agreement?

20 A Yes, I think so.

21 MR. KELLY: Mr. Commissioner, I would like to state
22 that we could develop more in testimony, but because of the
23 nature of this reservoir it is important that the injection
24 project begin as soon as possible and we have received
25 permission from the U.S.G.S. to begin injection prior to

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1 formal approval of the unit agreement.

2 Q (By Mr. Kelly) Is it Teneco's position that if
3 granted what is proposed in this Application, that
4 Tenneco would inject before formal approval by the
5 U.S.G.S. and B.I.A.?

6 A Yes, it is.

7 MR. KELLY: At this time I would move the introduction
8 of Exhibits 1 through 3 -- Exhibit 2 is a duplicate of the
9 proposed unit agreement; is that correct?

10 THE WITNESS: That is correct.

11 MR. KELLY: And Exhibit 1 was prepared by you or
12 under your supervision?

13 THE WITNESS: That is correct.

14 MR. UTZ: Without objection, Exhibits 1 through 3
15 will be entered into the record of this Case.

16 (Whereupon, Tenneco's Exhibits 1 through 3 were
17 admitted in evidence.)

18 MR. KELLY: Mr. Melnar will be recalled for the
19 Engineering testimony on the pressure maintenance aspect
20 of this, but that is all I have on this phase of the Case
21 for him.

22 That concludes our direct testimony on the unit
23 agreement itself.

24 MR. UTZ: Do you want to submit him for Cross-
25 Examination, at this time, then?

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1 MR. KELLY: Whatever pleases the Commissioner.

2 MR. UTZ: Any questions?

3 CROSS-EXAMINATION

4 BY MR. HATCH:

5 Q On page 12 of Exhibit 2, in Section 13, when you were
6 speaking of tract participation, it says that Exhibit
7 "C" shows the participation; is this Exhibit "C"
8 (indicating)?

9 A Yes.

10 MR. HATCH: That's all I have.

11 MR. UTZ: If there are no other questions, the
12 witness may be excused.

13 (Witness excused.)

14 MR. UTZ: The witness will be subject to recall.

15 A. D. RIAL,

16 was called as a witness and having been already duly sworn,
17 testified as follows:

18 DIRECT EXAMINATION

19 BY MR. KELLY:

20 Q Would you state your name, position and employer,
21 please?

22 A A. D. Rial, District Geological Engineer for the
23 Tenneco Oil Company.

24 Q You have previously been qualified by the Commission?

25 A Yes.

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1 Q Mr. Rial, will you refer to the structure map marked
2 Exhibit 4 and explain the Exhibit's significance to
3 the Commissioner?

4 A Exhibit 4 is a structure map drawn to the top of the
5 Dakota "D" zone. Shown here on the plat, is the
6 location of all of the producing and dry holes that
7 are in the area.

8 The producing zones are coded and shown in the
9 legend in the lower left-hand corner.

10 We see here the location of the Hospah field and
11 South Hospah field, and then the Dakota-Lone Pine.

12 The Dakota Pool is principally in Section 13 of
13 17 North, Range 9 West, and Section 18, of Township
14 17 North, and Section 8 West.

15 This shows the separation of the South Hospah
16 Pool and the Lone Pine-Dakota Pool. The Lone Pine-Dakota
17 Pool is shown on the structure map and is colored in
18 green and this line is the line which denotes the
19 structural position of the gas-oil contact.

20 Also shown in red is the structural position of
21 the oil-water contact.

22 Q You have a cross section marked as Exhibit 5?

23 A Yes. Shown on the cross section, which is the cross
24 section shown in blue and which goes from the Hospah
25 Well Number 44 in the southeast, across the field to

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1 a dry hole in the northwest of the southwest of
2 Section 17.

3 Also shown on this map, is an outline of the
4 proposed field.

5 Q Why don't you go on to the cross section?

6 A All right. This is a scale of the cross section as
7 shown in the lower right-hand portion of the cross
8 section.

9 What it primarily represents to show is the
10 continuity of the Dakota zone which is colored and
11 shows the position of the top of the sixteen percent
12 and the base of the sixteen percent, and the continuity
13 across the field.

14 It shows the position of the gas-oil contact and
15 the oil-water contact. The gas-oil contact and the
16 oil-water contact was described in the previous
17 structural map.

18 Q And Exhibit Number 6 is a log of the well that defines
19 the vertical limits of the unitized formation; is that
20 correct?

21 A That is true.

22 Q Now, the unitized formation is shown in Exhibit 6
23 and encompasses entirely the vertical limits of the
24 productivity zone of the formation; is that correct?

25 A Yes, it does.

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1 Q In your opinion, does the unit encompass both the
2 vertical and horizontal limits of this pool?

3 A As we see right now, there is one possible exception,
4 and that is the State Well that was completed by
5 Kennedy in the southwest of the southeast of the
6 northwest of Section 8, 17 North and 8 West.

7 At the present time it cannot be determined whether
8 it is actually in the Lone Pine Pool or separated from
9 the Lone Pine Pool and is producing in the Dakota "D"
10 zone.

11 Q Now, with the exception of that well, are all of the
12 other existing wells in the Dakota "D" zone in the
13 unit?

14 A Yes, they are.

15 MR. KELLY: Mr. Examiner, that would conclude the
16 testimony of Mr. Rial. I would like to submit him for
17 Cross-Examination on Geology.

18 MR. UTZ: Any questions of the witness?

19 CROSS-EXAMINATION

20 BY MR. KENDRICKS:

21 Q Is Well Number 12 in the northeast of the southeast
22 of Section 7 completed in the "D" zone or the "A"
23 zone?

24 A It is completed in the "D" zone.

25 MR. KENDRICKS: That's all.

1 MR. UTZ: Which well was that?

2 THE WITNESS: Well Number 12 in the northeast
3 of the southeast of Section 7.

4 MR. UTZ: Any other questions?

5 (No response.)

6 MR. UTZ: If not, the witness may be excused.

7 (Witness excused.)

8 WILLIAM MELNAR,

9 was recalled as a witness and, having been already duly
10 sworn, testified as follows:

11 DIRECT EXAMINATION

12 BY MR. KELLY:

13 Q Mr. Melnar, going into the engineering on the proposed
14 pressure maintenance project, what is the drive
15 mechanism of this reservoir?

16 A The drive mechanism is gas drive.

17 Q Referring to Exhibit 7, which is a summary of the
18 general reservoir data, would you point out the
19 significant items?

20 A All pertinent rock in the Lone Pine-Dakota reservoir
21 can be seen. The reservoir contains low pressure with
22 pressure of 992 P.S.I. with a volume factor of 1.25;
23 a G.O.R. of 962; a standard cubic feet high-low gravity
24 and low viscosity of 332 with an average of 19.3.

25 Based on a computation of this material, the

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1 estimated oil recovery will be 3.18 million barrels
2 of oil or thirty percent of the oil in place.

3 An additional twenty-five percent of the original
4 oil in place, or 2.65 million barrels of oil can be
5 recovered by pressure maintenance with a P.S.I. of
6 992.

7 I am also going to emphasize that, to obtain
8 additional recovery of 2.65 million barrels of oil,
9 it will require sufficient gas to maintain 992 P.S.I., to
10 maintain that pressure.

11 Q In reference to that, will you refer to Exhibits 8 and
12 9 and explain why they are important?

13 A Exhibit 8 is a pressure production history of the
14 Lone Pine-Dakota "D" field. The solid curve at the
15 bottom of the Exhibit which reads to the left, shows
16 monthly production from the field in barrels of oil
17 per month.

18 You can see that in recent months the field has
19 produced between sixty and sixty-five thousand barrels
20 of oil per month.

21 The curve at the bottom, which reads to the right,
22 is accumulative oil production curve and I just want
23 to point out that, as of December of 1971, the
24 accumulative production was approximately 780,000 barrels.

25 Now, the curve at the top of the Exhibit is the

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1 bottom hole pressure expressed in P.S.I. You can see
2 the original pressure was 992 P.S.I. and it then
3 declined to approximately 762 P.S.I. since June of
4 1970.

5 Now, if we look at the slope of the decline
6 curve, we can calculate that the recovery has been
7 approximately 4,300 barrels of oil per P.S.I. since
8 the drop of pressure in the reservoir.

9 Now, if you go to Exhibit 9, Exhibit 9 is the
10 recovery maintenance pressure of the Lone Pine-Dakota
11 "D" field. Shown on the Exhibit is the recovery in
12 millions of barrels, on the right, and in percentage
13 of recovery on the left.

14 If the initial pressure of 992 P.S.I. was maintained
15 the recovery could be 5.83 million barrels of oil.
16 However, if unitization is declared, or we do not have
17 sufficient gas to bring about significant recovery, we
18 can lose the ultimate secondary recovery.

19 This is brought out by the fact that, at 60,000
20 barrels of production every month in this field, we are
21 losing approximately 14 P.S.I. per month in reservoir
22 pressure and this is shown by the curve.

23 For each pound of decrease in pressure, we can
24 lose approximately 3,500 barrels of oil in secondary
25 recovery.

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1 If you multiply 3,498 times 14 P.S.I., it shows
2 you can lose 50,000 barrels of ultimate secondary
3 recovery for each pound lost in pressure.

4 Q Let me see if I understand you. At the present time,
5 what is the pressure in the reservoir?

6 A Seven hundred forty-two pounds, approximately.

7 Q So if you maintain the pressure, what would be your
8 estimate of the recoverable reserves?

9 A If we started injecting the recovery would be
10 approximately five million barrels instead of 5.85.

11 Q As I understand it, you plan to build the pressure
12 up to the initial bottom hole pressure?

13 A Yes.

14 Q As a matter of fact, Tenneco has received permission
15 from the Oil Conservation Commissioner last Fall to
16 store produced gas in the Dakota zone; is that correct?

17 A Yes.

18 Q What you are going to do is start producing the stored
19 gas and reinjecting it?

20 A That is correct.

21 Q Now, Exhibit Number 10 is your proposed gathering
22 system; is that correct?

23 A Yes, it is.

24 Q Would you explain the various symbols on this Exhibit?

25 A Exhibit 10 shows the proposed gas injection wells and

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1 they are covered in green. The proposed water
2 injection well is colored in red. Then we show the
3 gas supply wells in blue.

4 We show on this pipeline gathering map the
5 pipeline systems for the gas distribution system and
6 also we show all the oil gathering lines for the unit.

7 Q Now, Wells Numbers 2 and 8, these wells you will
8 reproduce the gas stored in the zone?

9 A That is correct.

10 Q So you are going to have four gas injection wells and
11 one water injection well, initially; is that correct?

12 A That is correct.

13 Q What is the present status of the water injection well?

14 A This is a temporarily abandoned well.

15 Q Are you asking for authority to inject water from other
16 sources?

17 A Yes, we are.

18 Q And, I assume, you are also asking for authority to
19 drill or convert additional water or gas injection wells
20 prior to a new Hearing?

21 A Yes.

22 Q And your proposed rules would cover that?

23 A Yes.

24 Q Is there anything else you want to say about the
25 gathering system?

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1 A I think that's it.

2 Q Now, turning to Exhibit 11, which actually is four
3 pages and sketches of all four gas injection wells,
4 would you explain just the top one?

5 A Yes. These are diagrams of the proposed gas injection
6 well for Well Number 44 and you can see the wells are
7 completed by setting five and one-half inch casing
8 and it is cemented by 350 sacks of cement.

9 This is a sufficient amount of cement to bring
10 the cement at least 1,000 feet above the Dakota "D"
11 perforation.

12 The injection of gas will still be under the
13 Packer which will be fifty feet above the perforation
14 and will be down 2 and 7/8 inch tubing. We will, of
15 course, maintain surveillance by installing pressure
16 gages.

17 Q And the other installations are similar there too?

18 A Yes, sir, they are.

19 Q Do you expect any erosion problems with this?

20 A We do not.

21 Q How many cubic feet a day will you be injecting?

22 A Approximately thirteen million cubic feet per day, or an
23 average of three or four million per day per well.

24 Q What about the pressure?

25 A We expect the pressure to be somewhere in the vicinity

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- 1 of twelve to eighteen hundred P.S.I.
- 2 Q Do you expect any problems in the zone?
- 3 A No.
- 4 Q Exhibit Number 12 is the same type of sketch for
- 5 water injection, will you briefly go through that?
- 6 A It is very similar. Again, we will complete the casing
- 7 and the cementing will be done in the same was as
- 8 previously described. We will maintain the surveillance
- 9 on the pressure.
- 10 Q Will this prevent migration of this projected water
- 11 into any other zones?
- 12 A Yes, it will.
- 13 Q I notice that all of these sketches in Exhibits 11 and
- 14 12, you show the actual footage location for the four
- 15 injection wells; is that correct?
- 16 A That is correct. It is shown on the upper left-hand
- 17 side of the Exhibit.
- 18 Q What are you doing with your water now?
- 19 A It is presently being put in a surface pit.
- 20 Q What are the characteristics of the water?
- 21 A It is fairly fresh water.
- 22 Q And your anticipated injection rate?
- 23 A Approximately 1,500 barrels of water per day.
- 24 Q How about pressure?
- 25 A The pressure is shown in Exhibit 13.

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1 Q Exhibit 13 shows the proposed rules governing the
2 unit. Would you go through those and point out anything
3 that would be unusual?

4 A We have previously submitted to you a copy of our
5 proposed rules and we made some slight revisions in that,
6 in those rules, and we would like to just point out these
7 revisions, if that is okay?

8 MR. UTZ: Okay.

9 A (Continuing) In rules 1 through 5, there are no
10 changes.

11 In rule 6 we eliminated a sentence. A portion of
12 the sentence begins in the fifth line and the remainder
13 of that paragraph is eliminated.

14 Q In order to make this sensible, will you refer to the
15 rules that were submitted with the Application?

16 A Rule 7 shows no change.

17 Rule 8 and rule 9, no change -- in rules 8 and
18 9 we added the words: "injection of gas or water
19 will be confined to the Dakota "D" Pool."

20 It previously read only injection of gas, and now
21 we say the injection of gas and water.

22 In item 3 we inserted that -- it read originally
23 that all of the offset operators will be furnished
24 with copies of the Application and the date of the
25 Application. It now reads that all offset operators

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1 within one-half mile of the proposed injection wells
2 will be furnished with an Application and date of
3 notification.

4 Rule number 10 is slightly revised and it allows
5 us to drill an injection well within the unit, but the
6 producer cannot be located nearer than 330 feet of the
7 outer boundary of the unit.

8 Q Now, these rules are basically similar to the other
9 adopted rules of the pressure maintenance projects
10 of New Mexico; is that right?

11 A That's right.

12 Q In your opinion, would the granting of this Application
13 protect the rights of all people involved?

14 A Yes, it would.

15 Q Were Exhibits 4 through 13 prepared by you, or under
16 your supervision?

17 A Yes, they were.

18 MR. KELLY: At this time, I move for the introduction
19 of Exhibits 4 through 13.

20 MR. UTZ: Without objection, Exhibits 4 through
21 13 will be made part of the record of this Case.

22 (Whereupon, Tenneco's Exhibits 4 through 13 were
23 admitted in evidence.)

24 MR. KELLY: That is all we have on Direct, Mr.
25 Commissioner.

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CROSS-EXAMINATIONBY MR. UTZ:

Q Mr. Rial, you are going to produce a certain amount of water with your oil; is that correct?

A Yes, we are.

MR. KELLY: This is Mr. Melnar.

MR. UTZ: I'm sorry.

Q (By Mr. Utz) You will reinject the produced water?

A We plan to inject it back into the producing formation.

Q What if you need more water than that?

A Than we now produce?

Q Yes.

A We possibly may need additional water at some future date.

Q Where would you get the water?

A It's possible we could use some produced water from the Hospah area.

MR. UTZ: Any other questions?

CROSS-EXAMINATIONBY MR. HATCH:

Q What water do you expect to be producing at the beginning of the operation?

A At the beginning, it should be approximately 1,500 barrels per day.

Q About what you would be injecting?

1 A Yes.

2 Q Do you plan to start injecting the wells immediately?

3 A Yes, that is what we propose to do.

4 MR. HATCH: I have nothing further.

5 CROSS-EXAMINATION

6 BY MR. KENDRICKS:

7 Q How much effect does the water drive have on the
8 reservoir, at the present time, or do you have any
9 way of knowing?

10 A I'd say very light, if any.

11 Q So you are not concerned at the present time about
12 the gas-oil contact being raised in the reservoir and
13 the water-oil contact not being raised?

14 A We are not concerned with that at all.

15 MR. KENDRICKS: I believe that's all.

16 MR. UTZ: You have stored gas produced out of
17 the field -- out of the zone?

18 THE WITNESS: Yes, sir.

19 MR. UTZ: All of it except that which has flared?

20 THE WITNESS: Yes.

21 MR. UTZ: Do you have enough gas in this zone for
22 pressure backup?

23 THE WITNESS: No, sir.

24 MR. UTZ: Where would you get the rest of it?

25 THE WITNESS: We have additional gas reserves to

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1 the north in the Hospah area that is still available for
2 us in the Lone Pine-Dakota.

3 We should have sufficient gas to initiate and
4 maintain the pressure maintenance project in this are.

5 MR. UTZ: I don't think the Commission is going
6 to hold you up from starting, we think you should have
7 started a long time ago.

8 MR. McGRATH: Are you going to have enough need
9 to use all the proposed gas in the entire Hospah area?

10 THE WITNESS: Would you please say that again?

11 MR. McGRATH: I said, do you anticipate you are
12 going to have a need for enough gas to use all the produced
13 gas in the Hospah area?

14 THE WITNESS: For the Lone Pine?

15 MR. McGRATH: Right.

16 THE WITNESS: I think we should probably use all
17 the gas that we have in the area, both in the Hospah and
18 the Lone Pine fields.

19 This is over a period of years, now.

20 MR. KENDRICKS: Can you give me any idea of the
21 amount of liquids that will be squeezed out of the gas that
22 is injected into this zone?

23 THE WITNESS: I don't have any numbers, Mr. Kendricks,
24 but we do feel there are a lot of liquids that will be
25 produced with the gas and the unit plans to install a plant

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1 to process this gas and recover these liquids.

2 MR. KENDRICKS: Do you have gas analyses for the
3 gas that was found?

4 THE WITNESS: I don't have any of these Exhibits
5 with me, I believe we submitted an Exhibit of this type at
6 the gas storage Hearing, but the analysis was very similar
7 in both the "A" and "B" zones.

8 MR. KENDRICKS: If you did submit those, would you
9 submit the gas analysis again, upon request?

10 THE WITNESS: Yes, we would.

11 MR. KENDRICKS: I think that's all.

12 MR. UTZ: Any further questions?

13 (No response.)

14 MR. UTZ: If not, the witness may be excused.

15 (Witness excused.)

16 MR. UTZ: Are there any statements?

17 (No response.)

18 MR. UTZ: The case will be taken under advisement.
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1 STATE OF NEW MEXICO)
2) ss
3 COUNTY OF BERNALILLO)

4 I, RICHARD E. McCORMICK, a Certified Shorthand Reporter,
5 in and for the County of Bernalillo, State of New Mexico,
6 do hereby certify that the foregoing and attached Transcript
7 of Hearing before the New Mexico Oil Conservation Commission
8 was reported by me; and that the same is a true and correct
9 record of the said proceedings to the best of my knowledge,
10 skill and ability.

Richard E. McCormick

CERTIFIED SHORTHAND REPORTER

[Faint handwritten notes and signatures at the bottom of the page]

I N D E XWITNESS:PAGEWILLIAM MELNAR

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Cross-Examination by Mr. Hatch	10
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A. D. RIAL

Direct Examination by Mr. Kelly	10
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Cross-Examination by Mr. Kendricks	13
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WILLIAM MELNAR (recalled)

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Cross-Examination by Mr. Utz	23
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Cross-Examination by Mr. Hatch	23
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E X H I B I T SAPPLICANT'S (Tenneco)OFFEREDADMITTED

Exhibit 1	Location Map Lone Pine Field	4	9
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Exhibit 2	Proposed Unit Agreement	5	9
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Exhibit 3	Letter from U. S. Dept. of Interior	7	9
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Exhibit 4	Structure Map	10	22
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Exhibit 5	Cross Section	11	22
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(EXHIBITS Continued)

APPLICANT'S

OFFERED

ADMITTED

Exhibit 6	Log	12	22
Exhibit 7	Summary	14	22
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Exhibit 9	Revocery Maintenance Pressure	15	22
Exhibit 10	Proposed Gathering System	17	22
Exhibit 11	Sketch, Gas Injection	19	22
Exhibit 12	Sketch, Water Injection	20	22
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