

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
CASE 10,727

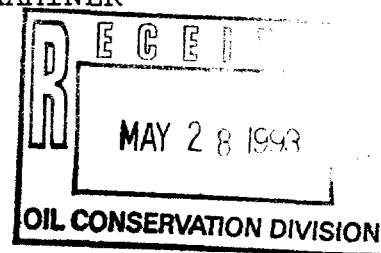
EXAMINER HEARING

IN THE MATTER OF:

Application of Mobil Exploration and Producing
U.S., Inc., for downhole commingling, Lea County,
New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER



STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

May 6, 1993

A P P E A R A N C E S

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1 WHEREUPON, the following proceedings were had
2 at 8:30 a.m.:

3 EXAMINER CATANACH: At this time we'll call
4 Case 10,727.

5 MR. STOVALL: Application of Mobil
6 Exploration and Producing U.S., Inc., for downhole
7 commingling, Lea County, New Mexico.

8 EXAMINER CATANACH: Are there appearances in
9 this case?

10 MR. KENDRICK: May it please the Examiner,
11 I'm Ned Kendrick with Montgomery and Andrews law firm
12 in Santa Fe, appearing on behalf of Mobil Exploration
13 and Producing U.S., Inc.

14 I have with me one witness who needs to be
15 sworn.

16 EXAMINER CATANACH: Okay, any other
17 appearances?

18 Will the witness please stand to be sworn in?

19 DANIEL HAWK,
20 the witness herein, after having been first duly sworn
21 upon his oath, was examined and testified as follows:

22 DIRECT EXAMINATION

23 BY MR. KENDRICK:

24 Q. For the record, please state your full name
25 and employer.

1 A. My name is Daniel Hawe. I'm employed by
2 Mobil Exploration and Producing U.S.

3 Q. What is your position at Mobil, and what are
4 your responsibilities?

5 A. I'm a senior staff reservoir engineer with
6 the mid-continent group, and my responsibilities are
7 for various properties in the West Texas and the mid-
8 continent area.

9 Q. Okay. Does that geographical area include
10 Lea County, New Mexico?

11 A. Yes, it does.

12 Q. How long have you held this position with
13 Mobil?

14 A. I've been in this position for approximately
15 one month.

16 Q. Okay. Have you appeared before the New
17 Mexico Oil Conservation Division, either examiner, or
18 the New Mexico Oil Conservation Commission and had your
19 qualifications as an expert in petroleum engineering
20 made a matter of record?

21 A. I have not.

22 Q. Okay. In that case, would you briefly
23 summarize your educational background and, as it
24 relates to petroleum engineering, your work experience?

25 A. I have a bachelor's degree, 1976, from

1 Montana Tech in Petroleum engineering, and my
2 experience has been 17 years of various aspects of
3 reservoir production operations, various areas, six
4 years with Amerada Hess Corporation, three years the
5 Superior Oil Company, and the remainder of the time
6 with Mobil.

7 Q. Have you appeared before any conservation
8 commissions in other states?

9 A. I've appeared in North Dakota and Oklahoma
10 and in Montana.

11 Q. Okay. Are you registered as a petroleum
12 engineer in any state?

13 A. Yes, I'm registered in Colorado and in
14 California.

15 Q. Okay, are you familiar with the Application
16 of Mobil in this case today?

17 A. I am.

18 MR. KENDRICK: And Mr. Examiner, I request
19 that Mr. Hawe be qualified as an expert in the field of
20 petroleum engineering.

21 EXAMINER CATANACH: Mr. Hawe is so qualified.

22 MR. STOVALL: Could you spell your name for
23 the --

24 THE WITNESS: H-a-w-e.

25 MR. STOVALL: Thank you.

1 Q. (By Mr. Kendrick) Okay, Mr. Hawe, would you
2 briefly describe the Application that Mobil has filed
3 and basically what you seek to do in it?

4 A. Mobil has requested permission to commingle
5 two producing zones in this field, the Wolfcamp and the
6 Upper Penn, in five wells, in order to efficiently
7 produce each of these reservoirs.

8 Q. Okay. Have you prepared certain exhibits for
9 introduction in this case?

10 A. I have.

11 Q. Okay, let's turn to what has been marked as
12 Exhibit 1, Mobil's Exhibit 1. Would you first identify
13 the exhibit and review the information contained on the
14 exhibit for the Hearing Examiner?

15 A. This is a map of the immediate area of the
16 South Shoe Bar field, which is the field in question
17 for our Application. It shows all of the producers
18 within an approximately 12, 16 township area that are
19 producing -- currently producing either the Wolfcamp or
20 the Upper Penn. It shows the Wolfcamp producers as
21 circles, the Upper Penn producers as squares.

22 The five wells in our Application are
23 highlighted in red. They are -- You'll note that there
24 are three Wolfcamp producers immediately adjacent to
25 our Application wells. These are three wells operated

1 by Mobil in the South Shoe Bar field, which are the
2 subject of an earlier or a different application for
3 commingling.

4 The two wells to the north, one to the
5 northeast, operated by -- is a Wolfcamp producer
6 operated by El Ran, Incorporated. The well off a mile
7 and a half or so to the northwest is operated by
8 Kaiser-Francis.

9 Q. Okay. As far as you know, these are the only
10 wells in the area depicted by this map that are
11 producing in the Wolfcamp or Upper Penn zones?

12 A. They are.

13 Q. Let's turn to Exhibit 2. Could you please
14 identify and review it for us?

15 A. Exhibit 2 is a map of the area, of the South
16 Shoe Bar field, which illustrates the Wolfcamp pool
17 outline and the Upper Pennsylvania outline. The Upper
18 Pennsylvanian pool is those six quarter sections
19 outlined with hatching. The Wolfcamp pool is
20 essentially the same with the exception of that one
21 quarter section in Section 1.

22 Q. Okay, and it looks like there are eight wells
23 on here, and could you just clarify again which ones
24 are subject to the Application and which ones aren't?

25 A. Okay, starting from the top in the southeast

1 part of Section 36, the Lovington Deep Yates Number 1
2 is part of the earlier application.

3 Going east to the southwest quarter of
4 Section 31, the Kriti Number 1 is part of that earlier
5 application.

6 The well all the way down in the bottom of
7 the page, the LD Amoco Number 3, is part of that
8 previous application.

9 The five wells in that center area of that
10 field are our current Application.

11 Q. Okay. Let's turn to Exhibit 3. Would you
12 identify and review it for us, please?

13 A. Exhibit 3 is actually two pages, each a lease
14 -- or a plat showing -- The first page is Lovington
15 Deep State lease. It shows the three wells in this
16 Application and the acreage associated with each well.

17 Page 2 is the Lovington Deep Amoco State
18 lease. It shows the wells in the Application and the
19 acreage associated with each of those wells.

20 Q. What is the spacing involved here?

21 A. The Pennsylvania is spaced 80 acres.

22 Q. Okay, let's turn to Exhibit 4. Please
23 identify and review it.

24 A. Exhibit 4 is a map which shows those lease
25 holders immediately adjacent to the Application area,

1 other than Mobil. There are three leases that fall
2 under this category, highlighted with the colors, owned
3 by Greenhill Petroleum, Texaco and Exxon. All the
4 leases immediately adjacent other than that are owned
5 by Mobil.

6 Q. Okay. Did Mobil notify the owners of these
7 three offsetting leases?

8 A. No, they did not. These leases do not
9 contain any wells in either of the subject zones.

10 Q. Okay, let's turn to Exhibit 5. Would you
11 identify and describe them, please?

12 A. Exhibit 5 is a -- It's five pages, a wellbore
13 schematic for each of the five wells in the subject
14 Application, one for each of the wells, showing the
15 configuration of the equipment and plugs in place,
16 perforations.

17 And rather than go through each of them, a
18 good example would be page 3. I'll draw your attention
19 to that. Page 3 is a schematic for the Lovington Deep
20 State Number 3. This is the only well in the
21 Application that actually has been perforated and been
22 produced in both of the zones that we are dealing with.

23 You'll see Pennsylvanian perms at the bottom,
24 a cast-iron bridge plug with 35 feet of cement on top,
25 separating that zone from the current Wolfcamp

1 perforations indicated just above that. This is
2 typical of all the schematics.

3 Q. Okay, and I take it the other four schematics
4 show perforations in the Pennsylvanian?

5 A. That's right.

6 Q. And not in the Wolfcamp?

7 A. Right.

8 Q. Okay. Let's turn to Exhibit 6. Would you
9 please identify and review it for us?

10 A. Exhibit 6 -- There's several pages, there's
11 12 pages. What they consist of is the Form C-105 and
12 C-103 that had been submitted to the State earlier for
13 each of the five wells in the Application.

14 Q. Okay. Is there anything remarkable or
15 anything worthy of note right now?

16 A. These just -- These contain information which
17 you also find in wellbore schematics, but it's the
18 information necessary for completion or subsequent
19 work. But they are just as a matter of record,
20 information that is not necessarily pertinent to the
21 issue, really.

22 Q. Okay, in that case, let's move on to Exhibit
23 7. Identify and review that for us.

24 A. Exhibit 7 are three pages that show recent
25 gas/oil ratio tests for each of the wells in the field.

1 There are eight wells in the field. Five of them are
2 part of this Application.

3 These were filed some time ago with the
4 State, and they are just included for information
5 purposes.

6 Q. Okay, and it looks to me like the first page
7 has only one well that's one of the subject wells that
8 we're dealing with today?

9 A. Right.

10 Q. And then it has three other wells that are in
11 the same field?

12 A. Right.

13 Q. But not subject to today's Application?

14 A. The Lovington Deep State 3 is the only one on
15 this page which is part of the Application.

16 The second page has the Amoco State 1, the
17 Deep State 1 and Deep State 2, and the last page has
18 the Amoco State 2.

19 Q. Okay. And I take it you provided this just
20 to complete the Application, but that you aren't
21 necessarily going to use this data --

22 A. No.

23 Q. -- for an allocation between the zones?

24 A. No, this is not my intent.

25 Q. Okay, let's turn to Exhibit 8. Could you

1 identify and review this exhibit?

2 A. Exhibit 8 is a set of production decline
3 curves, and immediately behind each decline curve is
4 the tabular production data for each of the wells in
5 the Application.

6 The curves themselves depict average daily
7 producing rates for each month, oil, gas and water.

8 We'll point out that the scales in the
9 schematic of these curves, the rate oil rate
10 indicated -- oil in barrels per day is indicated by the
11 step-type line, more or less of a bar fashion.

12 The heavyweight solid line is the water
13 production in barrels per day.

14 The lighter solid line is gas, MCF per day.

15 Q. Just so I understand how these graphs work,
16 is this the exact same information that you have in
17 tabular form?

18 A. Yes, the tabular form is actually the oil,
19 gas and water volumes for each month and the days,
20 producing days, included. The average daily rate
21 that's plotted on the plot is determined from this --
22 the production for the month divided by the days in the
23 month, to get the average daily rate for that month.

24 Q. Okay. So you have 12 data points per year?

25 A. Right.

1 Q. One per month, based on averages?

2 A. Right.

3 Q. Okay.

4 A. And there is one curve for each well. And
5 rather than go through each of them, they're
6 essentially all Pennsylvanian with the exception -- and
7 I'll just draw your attention to the Deep State Number
8 3, beginning on page 7 of the exhibit. This is the
9 well that has production data for both zones. It
10 currently is producing from the Upper Wolfcamp.

11 Page 7 shows the Wolfcamp production curve.

12 Page 8 is the tabular data from which this
13 curve was derived.

14 Page 9 is the Pennsylvanian production curve,
15 which -- That's the zone the well was producing from,
16 prior to being recompleted in the Wolfcamp.

17 Page 10 is the tabular data for the
18 Pennsylvanian curve.

19 You'll note that the production curve on page
20 9 stops in January, 1991, as does the Wolfcamp curve
21 begin in January, 1991, when the well was recompleted.

22 Q. Okay, what strikes me here is the production
23 looks pretty good out of the Wolfcamp.

24 A. Yes, this Wolfcamp producer is somewhat
25 anomalous to typical Wolfcamp production in the field.

1 The rate has been holding fairly steady.
2 You'll note that the well began production at well over
3 300 barrels a day and experienced a rapid drop.
4 Typical Wolfcamp production would see that drop
5 continue for some time and stabilize at much lower
6 rates.

7 We seem to be holding at the 80 to 100
8 barrels per day, and have been for about a year or so.

9 I did some research and found out that there
10 was some evidence of natural fracturing in this
11 Wolfcamp, in this well, that would certainly increase
12 the producibility of the -- natural permeability of the
13 well and the producing rate that we could get.

14 The --

15 Q. So that if you were to extrapolate outward,
16 what would you predict from this well?

17 A. Well, I see a downward trend. But what we
18 really are experiencing right now could be described as
19 production from the fracture system.

20 And then once the fracture system is depleted
21 -- In fractured reservoirs, the fracture system
22 depletes first, and then you experience your typical
23 decline, as with the other Wolfcamp wells, matrix
24 permeability.

25 Q. Okay. Let's -- While we're talking about the

1 Wolfcamp well, let's go to Exhibit 9.

2 A. Exhibit 9 is actually the -- producing
3 decline curves and data for the three wells, the other
4 three wells in this field that are not part of this
5 Application. They're part of a previous application.

6 But these three wells produce from the Upper
7 Wolfcamp.

8 Q. Now, just so we know what wells you're
9 talking about, I believe these are the wells that are
10 depicted on Exhibits 1 and 2?

11 A. On Exhibit 1, you would note them as the
12 three black circles immediately around our subject
13 wells.

14 So they're in the field, producing from the
15 Wolfcamp, and these are the wells that give us the
16 indication of typical Wolfcamp production, typical
17 Wolfcamp rates and decline -- production decline rates.

18 Q. Okay, what -- Can you describe further what
19 those rates appear to be?

20 A. Well, we have current rates in these three
21 Wolfcamp wells of -- It looks like 19 barrels a day,
22 around eight barrels a day, and 20 barrels a day,
23 current rates.

24 Q. Okay. Maybe give us a little production
25 history, if you compare over a similar time period

1 total production from these three Wolfcamp wells with
2 the Wolfcamp well that's the subject of our Applica-
3 tion --

4 A. I did look at that. These three Wolfcamp
5 wells averaged in their first 18 months -- Essentially
6 that's about all the life they have so far. In the 18
7 months they averaged 15,000 barrels per well recovery.

8 The Lovington Deep State Number 3, shown in
9 Exhibit 8, the well we suspect has fracture
10 permeability to enhance it, produced 70,000 barrels in
11 its first 18 months of production. That's a vast
12 difference, really, and the point that I would make is
13 that the explanation what seem to be the existence of
14 additional permeability that we just don't typically
15 find in Wolfcamp producers.

16 Q. Okay, and that's not what you find when you
17 complete these subject wells into the Wolfcamp
18 formation?

19 A. Our expectations really are to find Wolfcamp
20 more like these three wells in Exhibit Number 9 than
21 what we've seen in the Deep State Number 3.

22 Q. Okay.

23 A. There is some additional data that tends to
24 support that, that will fall in a later exhibit that I
25 will address later.

1 Q. Okay. Do you have any more remarks on
2 Exhibit 9 at this time?

3 A. I don't.

4 Q. Okay. Now that we've discussed decline
5 curves in Exhibits 8 and 9, how would Mobil propose to
6 allocate future commingled production between these two
7 zones?

8 A. Four of the wells in the Application are
9 producing only from the Upper Penn and have no history
10 other than that.

11 What we would do is anticipate that the
12 producing rate from the Pennsylvanian would be
13 subtracted from total production, and the difference be
14 allocated to the Wolfcamp, that we have a -- we can
15 forecast what Pennsylvania production would be in the
16 future, at any point in time. We can deduce, then,
17 what -- the difference between being Wolfcamp
18 production from the commingled stream.

19 Q. Okay. Is the ownership of these two zones
20 common?

21 A. Yes, it is.

22 Q. Okay. Let's turn to Exhibit 10. Could you
23 identify and review it for us?

24 A. Exhibit 10 are three pages. What we have
25 attempted to show is the compatibility of the water

1 from these two zones.

2 This water -- The first page is actually a
3 water analysis on two water samples. Sample Number 1
4 is produced water from the adjacent Greenhill Lovington
5 unit. If you note on Exhibit 1, it's immediately to
6 the southeast of the unit. This is where all the
7 produced water is currently going from all of our
8 producing wells.

9 The West Lovington unit is a waterflood.
10 They use this water to supplement their water
11 production for their waterflood.

12 So what they have done is take a sample,
13 which is labeled Number 1, do an analysis. Then they
14 have a sample labeled Number 2, which is our water
15 production from the Deep State unit, which actually is
16 commingled water from both zones.

17 What they were doing is testing the
18 compatibility of our water with their water, and found
19 no scaling tendencies, no compatibility problems.

20 Q. No precipitation?

21 A. No precipitation, no problems whatsoever.

22 Page 2 and page 3 are actually the surface
23 commingling permit that we currently have to combine on
24 the surface all production or all fluids from each of
25 the wells in our South Shoe Bar field.

1 So currently all of the Wolfcamp and Upper
2 Penn water is being commingled at the surface in
3 production facilities. And we have not exhibited --
4 evidenced any scaling problems, precipitants or any
5 compatibility problems.

6 Q. Okay. Do you know anything about the
7 gravities of the production from those two zones?

8 A. The oil gravities are very similar. I've
9 seen a Wolfcamp gravity of 41 and an Upper Penn gravity
10 of 46, and they are currently commingled at the surface
11 and sold as a blend from the field.

12 Q. Is there any evidence that the value of the
13 commingled production is any less than the sum of the
14 value of the separate productions?

15 A. No, there's no evidence that the gravity of
16 the blend is -- The value of that gravity would be the
17 same if it would be sold separately.

18 Q. Okay. Let's turn to Exhibit 11. Would you
19 identify and review it for us?

20 A. Exhibit 11 is some pressure data that we have
21 obtained for the wells in this Application, in this
22 field.

23 The first page of Exhibit 11 was actually
24 some original pressure data taken from drill stem tests
25 when these wells were drilled. You'll see most of them

1 are Wolfcamp pressures.

2 Midway down the page, a date of November 3rd,
3 1987, is the Lovington State Number 2, an Upper
4 Pennsylvania drill stem test. The others are all
5 Wolfcamp drill stem tests and original pressures.

6 What this indicates, basically, is that
7 original pressure in both zones is in the 4500- to
8 4700-pound range with really very little difference
9 between the two zones in original pressure.

10 Q. Okay. Would you say that these are typical
11 Wolfcamp and Penn pressures, as far as you know?

12 A. I would expect these to be typical for any
13 virgin pressure, any original pressure, before any
14 depletion, that -- There's some other information that
15 I've noted on this data that I would point out.

16 The third drill stem test, the Lovington
17 State Number 2 at 10,357, shows an initial and a final
18 drill stem pressure. Drill stem tests typically have
19 two buildups done, initial and a final, as is the next
20 drill stem test, have one, and the one after that.

21 That Upper Pennsylvania drill stem test shows
22 an initial shut-in pressure of 4715, a final shut-in
23 pressure of 4708.

24 The next drill stem test in the Lovington
25 State Number 3 at 10,191 feet in the Wolfcamp shows an

1 initial drill stem shut-in pressure of 4633.6, the
2 final shut-in pressure, 4546.3.

3 The fact that in each of these cases that the
4 final pressure is lower, somewhat lower than the
5 initial shut-in pressure for the same reservoir at
6 essentially the same time is due to the length of the
7 buildup, length of the drawdown in each of those two
8 tests. The initial test is run for a shorter period of
9 time.

10 It's been my experience that to note a lower
11 pressure in the final is usually an indication of
12 somewhat lower permeability. And I would note that the
13 last drill stem test, Lovington Deep State Number 3, in
14 a lower portion of the Wolfcamp, had an initial and
15 final shut-in pressure that are identical, something
16 you might expect to see in some extraordinary
17 permeability or in the presence of fractures.

18 Q. Okay. Generally when the subject wells are
19 completed into the Wolfcamp, I understand you would
20 expect an initial pressure to be in the range of 4600
21 to 4700?

22 A. I have no reason to believe that where we
23 have not produced Wolfcamp that the pressure should be
24 any less than what these original pressures were.

25 Q. Okay. Let's go to page 2.

1 A. Page 2 is a recent shut-in static fluid level
2 that was measured in the Loving Deep State Number 2,
3 which is a Pennsylvania producer. This is a method by
4 which we can get a pretty good estimate of what
5 bottomhole pressure is. This is a 24-hour shut-in
6 pressure, so this is not necessarily interpreted as a
7 reservoir pressure.

8 Since these are very tight reservoirs, a very
9 long drawdown -- a very long shut-in period would be
10 required to arrive at any real reservoir pressure.

11 But what we do see here is that at the end of
12 the 24 hours, noting the surface casing pressure
13 measured and the final fluid level above the pump, a
14 shut-in bottomhole pressure at 24 hours was indicated
15 to be 500 pounds.

16 Q. Okay. Would you say this is a typical or
17 expected pressure for a Penn well that's been producing
18 for a few years?

19 A. It seems to be reasonable for the nature of
20 the reservoir and the production from the well.

21 Q. Okay.

22 A. I would expect that this well -- This well
23 would continue to build up pressure, that it's hard to
24 say as to what its ultimate buildup pressure would be
25 in a given -- ten days or two weeks, it might approach

1 something in the nature of 1000 pounds, but certainly
2 not much more than that in my estimate.

3 Q. Okay. And could you just discuss for a
4 moment page 3 of the exhibit?

5 A. Page 3 is a similar shut-in fluid level
6 measured on the Deep Yates State Number 1, which is
7 actually a Wolfcamp producer well, not part of this
8 Application. It's one of the Wolfcamp producers of
9 that three that we've been referring to.

10 It shows essentially the same pressure, 500
11 pounds, for the same shut-in period, in a different
12 zone.

13 Q. Okay. So basically after a Pennsylvanian
14 well or a Wolfcamp well produced for several years, it
15 looks like the pressure pretty much is equal?

16 A. Well, that -- it's obvious that -- The
17 Wolfcamp is spaced at 40 acres; that fits its typical
18 permeability profile. Tighter reservoirs are not able
19 to drain as large an area.

20 The Wolfcamp is typically a tighter reservoir
21 than the Pennsylvanian, and that although the time
22 frames for these two wells is about the same, the
23 Pennsylvania producer had actually produced more oil
24 than the Yates State 1 from the Wolfcamp. Yet the
25 pressure depletion seems to be about the same.

1 Q. Okay. Now, let's -- What's obvious, I guess,
2 to any of us is that it looks like there's quite a
3 disparity between what we expect to be an initial
4 Wolfcamp pressure where you go into those zones in the
5 subject wells and the current Penn pressure in one of
6 those wells.

7 A. Right. That is obvious, that in the four
8 wells that are producing from the Pennsylvania in this
9 Application, current Pennsylvania pressure would have
10 to be -- is actually -- one of them measured, and we
11 know it's going to be very low, and the Wolfcamp is
12 most likely in the 4500-pound range.

13 That's mitigated by the fact that the
14 Wolfcamp is most likely very tight.

15 But I would expect that appropriate procedure
16 to do the commingling or to recomplete and add the
17 Wolfcamp would be to set a temporary -- a retrievable
18 bridge plug immediately above the Pennsylvania
19 perforations, open the Wolfcamp and test its pressure
20 and its producibility, and if, in fact, it is -- has
21 that disparity in pressure and if it is capable of
22 producing at a very high rate for a short period of
23 time, to draw the reservoir down somewhat until the
24 producing rates and flowing -- bottomhole flowing
25 pressures are more similar.

1 At such time, the retrievable bridge plug
2 could be retrieved and the wells commingled without a
3 problem.

4 We have seen from both of these static fluid
5 levels that they keep the wells pumped down to -- so
6 there's no working fluid level. They keep all the --
7 All fluids that are produced by the Pennsylvania are
8 being lifted by the pump.

9 If this working fluid level is kept down at
10 the pump, that each zone will be free to produce
11 without any interference.

12 Q. Would you expect this temporary bridge plug
13 would be necessary in every case, or that you might
14 check a couple wells first?

15 A. I would recommend that we -- at least the
16 first couple wells, that we follow this procedure, set
17 a bridge plug and open the Wolfcamp, test it.

18 We're finding that there doesn't seem to be
19 the need for it that I would expect, perforate the
20 Wolfcamp without that separation.

21 We've seen in the -- in all the Wolfcamp
22 producers, actually, the initial high producing rate
23 that we see, and high bottomhole pressure, drops pretty
24 rapidly. So it's not a long period of time that we
25 would expect the need for that -- to have that bridge

1 plug.

2 Q. And I expect if you set this bridge plug,
3 there would be an added benefit of, again, some initial
4 production data from the Wolfcamp?

5 A. That's true. If we leave it that we can
6 produce the Wolfcamp for a month or so and get
7 additional information that could be used for
8 allocation, we would have a Wolfcamp producing rate
9 immediately before such time they were commingled. It
10 would help us to allocate a little more accurately.

11 Q. Okay. Were Exhibits 1 through 11 prepared by
12 your or compiled by you?

13 A. Yes, they were.

14 MR. KENDRICK: At this time, Mr. Examiner,
15 I'd like to offer Exhibits 1 through 11.

16 EXAMINER CATANACH: Exhibits 1 through 11
17 will be admitted as evidence.

18 Q. (By Mr. Kendrick) Mr. Hawe, are you aware of
19 any other nearby wells where downhole commingling and
20 production from the Wolfcamp and upper Pennsylvanian
21 zones has occurred?

22 A. I'm told that in the Vacuum field, which is
23 very nearby, that Mobil has two wells, the Bridges
24 States Number 102 and Number 104, which actually are --
25 have commingled production from both these zones.

1 Q. Okay. In your opinion, Mr. Hawe, would the
2 granting of this Application be in the best interests
3 of the prevention of waste and the protection of
4 correlative rights?

5 A. Yes, it would.

6 MR. KENDRICK: Mr. Examiner, that concludes
7 my examination of this witness.

8 EXAMINATION

9 BY EXAMINER CATANACH:

10 Q. Mr. Hawe, I'm a little bit unclear about the
11 temporary bridge plug. Are you proposing to do this in
12 every well?

13 A. I would suggest to the -- when we write a
14 completion procedure, that we at least do it in the
15 first couple of wells.

16 And if the need doesn't appear to be there
17 after -- Because we're not really sure what we're going
18 to find in each of these Wolfcamp. We would anticipate
19 that it should be original pressure. We don't know
20 what kind of permeability and what kind of
21 producibility we will find.

22 I would expect that it will -- at the very
23 least, the first well that we try, we would follow this
24 method.

25 Q. Is it your opinion that the discrepancies in

1 reservoir pressure won't in any way, as long as the
2 wells are kept in a pumped-off condition, that it won't
3 adversely affect or cause any cross-flow to occur?

4 A. I expect that there would be no cross-flow if
5 the wells are kept pumped off.

6 Q. If we could go through well by well and kind
7 of give me an idea what the current production is, if
8 we can do that, Mr. Hawe --

9 A. Sure. I have some -- The data that's
10 contained in Exhibit 8, the monthly data, I have the
11 last monthly production, just a daily rate for each
12 well, and I'll just go through and...

13 The Lovington Deep State Number 1, in -- I
14 have a December of 1992 rate from the Upper Penn of 11
15 barrels per day, zero water, and 41 MCF a day gas.

16 Q. Okay.

17 A. Deep State Number 2, Upper Penn --

18 Q. Wait, hang on a second. Okay.

19 A. -- December, 1992, 15 barrels of oil per day,
20 five barrels of water per day, 50 MCF per day.

21 Q. Okay.

22 A. The Lovington Deep State Number 3, November
23 of 1992, from the Upper Wolfcamp, I have a rate of 100
24 barrels of oil per day, 145 water, 122 MCF per day.

25 Q. Okay.

1 A. The Amoco -- The Lovington Deep Amoco State
2 Number 1, December of 1992, 16 oil, zero water, 102 MCF
3 per day.

4 Q. I'm sorry, the last number was --

5 A. -- 102.

6 Q. Okay.

7 A. The Amoco State Number 2, December, 1992, 34
8 oil, one barrel of water per day, 141 MCF per day.

9 Q. That production is all from the Pennsylvania
10 except for the Deep State Number 3?

11 A. That's correct.

12 Q. Okay. Is that typical production, the
13 numbers that you've just cited? Is that pretty much
14 average production for wells?

15 A. Right, the average production for the
16 Pennsylvanian appears to be at 16 barrels per day.

17 EXAMINER CATANACH: Okay.

18 MR. KENDRICK: And I might reiterate that the
19 production from the Wolfcamp is not what you would
20 consider to be average.

21 THE WITNESS: Right, the State Number 3 is
22 not typical Wolfcamp production. The other three wells
23 that we brought into evidence average 15 or 16 barrels
24 a day themselves.

25 Q. (By Examiner Catanach) Okay, that was my

1 next question. What do you expect to get from the
2 Wolfcamp in these four recompletions?

3 A. Initially we expect some -- You know, it's
4 not reasonable to expect that the first month it might
5 average a hundred barrels a day.

6 But they drop so rapidly that within a very
7 short period of time they're going to be in the 15- to
8 20-barrel-per-day range, in a matter of months.

9 Q. You don't expect to encounter any more
10 Wolfcamp production like you encountered in the Number
11 3 well?

12 A. It's not expected. It's not an
13 impossibility. It would be welcome, but it's kind of a
14 fluke in this area.

15 Q. If you did encounter such production, how
16 would you propose to handle that?

17 A. If we were to find a Wolfcamp well in one of
18 these wells similar to the Deep State Number 3, I would
19 expect that we would postpone commingling that well
20 until it had produced -- declined down to a point more
21 conducive to the others.

22 If you end up with a hundred barrels a day,
23 you don't want to really mess with it until it's
24 necessary.

25 Q. Is the Wolfcamp formation, is that a high-

1 water-production formation?

2 A. It appears to be essentially the same. This
3 doesn't appear to be any more or less wet than the
4 Pennsylvania there; they have similar rates.

5 Actually, it's somewhat lower, with the
6 exception of the State Number 3. It's producing 145
7 barrels of water per day, but the fracture system would
8 -- could account for that as well.

9 Q. Okay. So that's not generally typical --

10 A. Right.

11 Q. -- of a Wolfcamp completion?

12 A. Typical Wolfcamp is -- The other wells are
13 averaging about five barrels of water per day.

14 MR. KENDRICK: If I might interject, it might
15 be useful for you just to give the figures, the oil and
16 water figures from the three Wolfcamp wells that are
17 not subject to this Application but that are nearby.

18 THE WITNESS: Okay, I have those here.

19 Q. (By Examiner Catanach) Why don't you go
20 ahead and give those to me?

21 A. The Amoco State Number 3, the Wolfcamp
22 producer, December, 1992, 20 barrels of oil per day,
23 three barrels of water per day, 40 MCF per day.

24 Q. Okay.

25 A. The Yates State Number 1, Wolfcamp producer,

1 December 1992, eight barrels of oil, one barrel of
2 water per day, 12 MCF per day.

3 Q. Okay.

4 A. The Kriti -- K-r-i-t-i -- 31, Number 1,
5 Wolfcamp producer, December 1992, 21 barrels of oil per
6 day, 11 barrels of water per day, 35 MCF per day.

7 Q. Okay. Mr. Hawe, you referenced an earlier
8 application. Have you already made application to
9 downhole commingle three additional wells?

10 A. These three wells, three Wolfcamp producers
11 have been part of an application that was sent in
12 administratively.

13 Q. Has that been approved?

14 A. I am not aware of the status of that yet.

15 Q. And I believe you testified that the
16 ownership within the two zones on all the wells is
17 common?

18 A. Yes, it is.

19 Q. Mobil is the only working interest owner?

20 A. Mobile is the operator. Mobil is not the
21 only working interest owner.

22 Q. Okay, but the working interest ownership is
23 common?

24 A. Yes, it is.

25 Q. Okay. And these are all state leases

1 involved?

2 A. I'm not aware of the type of leases they are.
3 I believe that -- I don't know the answer to that.

4 Q. Okay. On your Exhibit Number 6 packet, it
5 looks like you've got checked off state leases on all
6 these well completions. That doesn't necessarily mean
7 everything is on state leases, but --

8 A. I believe they are, but I just am not
9 certain. I've not had a chance to really go over some
10 of the particulars with the landman, but I'm going to
11 assume they are.

12 Q. Okay. The Commissioner of Public Lands has
13 its own regulations regarding downhole commingling, and
14 I believe you're going to have to file an application
15 with them to do this procedure. That's my
16 understanding. So you might want to check with them,
17 Mr. Kendrick, after the hearing.

18 If in fact these are all state leases,
19 they're under the jurisdiction of the Commissioner of
20 Public Lands.

21 Our approval is not contingent upon their
22 approval, but we generally like to see you at least
23 have talked to them or notify them or something.

24 MR. STOVALL: After you've talked to them, if
25 you'd let us know what -- if they give you an approval

1 or any conditions, just submit a copy of it.

2 MR. KENDRICK: Okay, we will.

3 EXAMINER CATANACH: I did talk with a
4 representative yesterday, and they were aware of the
5 Application this morning. That was Mr. Pete Martinez.
6 So you might want to talk to him about what you may
7 need to do with them.

8 Q. (By Examiner Catanach) Mr. Hawe, these are
9 all currently pumping, and they will remain being
10 pumped --

11 A. Yes, sir.

12 Q. -- upon commingling?

13 A. (Nods)

14 Q. And the allocation, you propose just to
15 utilize the subtraction type method to determine
16 Wolfcamp production?

17 A. Uh-huh.

18 Q. Do you plan -- When you do the Wolfcamp
19 recompletions, do you plan to do any additional work to
20 the Pennsylvanian?

21 A. There is none planned.

22 Q. So nothing to enhance the Pennsylvanian
23 production?

24 A. No.

25 Q. So it shouldn't change?

1 A. It should not change, no.

2 Q. Have you looked at the value of the crude
3 from each zone, and will that be diminished by
4 commingling?

5 A. It will not be diminished. The value of the
6 crude is based on its gravity. They are similar
7 composition content. The gravity, the blend, is
8 obviously some ratio mixture of the two. It currently
9 is being sold as a blend. All the crude is commingled
10 at the surface as per the surface commingling permit
11 that we do have, so that nothing will change as far as
12 that.

13 EXAMINER CATANACH: Okay, I believe that's
14 all I have.

15 MR. STOVALL: I have no questions.

16 FURTHER EXAMINATION

17 BY MR. KENDRICK:

18 Q. Final question, Mr. Hawe: About how long ago
19 did you submit the administrative application for the
20 other three -- commingling the other three wells in
21 this field?

22 A. It was, I'm going to say, three weeks ago,
23 maybe four, give or take. I'm not certain of the
24 actual date, but it was within the last month.

25 MR. KENDRICK: Okay, thanks. And Mr.

1 Examiner, I understand there was a -- some inadvertence
2 in the notice that went out to, I think, the Lovington
3 paper. Ms. Davidson informed me of this, that the
4 wrong date was what was put on the hearing notice, the
5 date of May 16 rather than May 6, which I understand
6 means we have to hold this open till June 3rd. Is that
7 -- That's what Ms. Davidson informed me. I just wanted
8 to --

9 MR. STOVALL: That's correct, Mr. Kendrick,
10 yeah. The ad appeared, and Lovington typed a "1" in
11 there in front of the "6", so that does...

12 MR. KENDRICK: Okay.

13 MR. STOVALL: Now, with respect to other
14 notice, Mr. Kendrick, am I correct that you have not
15 identified other operators, offset operators in these
16 pools that required notice?

17 MR. KENDRICK: Correct, we identified three
18 offsetting lease owners, and there are no wells
19 completed into these two zones on those leases, so on
20 that basis Mobil did not notify those three offsetting
21 lease owners.

22 EXAMINATION

23 BY MR. STOVALL:

24 Q. And let me ask, Mr. Hawe, I mean, would there
25 be any impact on offsetting undeveloped tracts, as far

1 as you're concerned, from commingling?

2 A. No, none whatsoever.

3 Q. It would not change production any way,
4 really, drainage effects or --

5 A. It would not.

6 MR. STOVALL: Mr. Examiner, Mr. Kendrick and
7 I discussed that before the hearing, and, you know,
8 unclear -- The rule requires notice to offset
9 operators, and you're simply saying there were -- there
10 are no offset operators in these pools?

11 MR. KENDRICK: Correct.

12 MR. STOVALL: So I think that satisfies that,
13 and as soon as we get the publication notice corrected,
14 that will satisfy that requirement.

15 MR. KENDRICK: Okay, and I think Mobil is
16 anxious to begin work on this commingling. And in view
17 of the fact that there will be a hearing -- Well, the
18 record has to stay open for four weeks until June 3rd.
19 I guess Mobil would enter a plea that to the extent
20 possible the Examiner could consider our Application,
21 pending that -- the additional notice, so that
22 hopefully the decision might not take as long after the
23 3rd as it would after the 6th today.

24 EXAMINER CATANACH: Okay, it's your
25 understanding I cannot issue an order until after the

1 3rd?

2 MR. KENDRICK: Understand that, yes.

3 EXAMINER CATANACH: Okay, but you're
4 requesting that just as soon as the 3rd passes, that an
5 order be ready to go?

6 MR. KENDRICK: Right, and we'd appreciate
7 that.

8 EXAMINER CATANACH: Okay.

9 MR. KENDRICK: I have nothing further.

10 EXAMINER CATANACH: There being nothing
11 further, Case 10,727 will be taken under advisement --
12 I'm sorry, it will be continued to June 3rd.

13 (Thereupon, these proceedings were concluded
14 at 9:17 a.m.)

15 * * *

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I do hereby certify that the foregoing is
a correct record of the proceedings in
the Examiner hearing of Case No. _____,
heard by me on _____ 19____.

_____, Examiner
Oil Conservation Division


1 CERTIFICATE OF REPORTER

2
3 STATE OF NEW MEXICO)
4) ss.
COUNTY OF SANTA FE)

5
6 I, Steven T. Brenner, Certified Court
7 Reporter and Notary Public, HEREBY CERTIFY that the
8 foregoing transcript of proceedings before the Oil
9 Conservation Division was reported by me; that I
10 transcribed my notes; and that the foregoing is a true
11 and accurate record of the proceedings.

12 I FURTHER CERTIFY that I am not a relative or
13 employee of any of the parties or attorneys involved in
14 this matter and that I have no personal interest in the
15 final disposition of this matter.

16 WITNESS MY HAND AND SEAL May 21st, 1993.

17
18 
19 STEVEN T. BRENNER
CCR No. 7

20 My commission expires: October 14, 1994
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23
24
25