

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BLDG.
5 SANTA FE, NEW MEXICO

6
7
8 28 August 1985

9 EXAMINER HEARING

10 IN THE MATTER OF:

11 Application of H. L. Brown, Jr. for CASE
12 special pool rules, Lea County, 8683
13 New Mexico.

14 BEFORE: Michael E. Stogner, Examiner

15
16 TRANSCRIPT OF HEARING

17
18 A P P E A R A N C E S

19
20 For the Division: Jeff Taylor
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23 For Santa Fe Exploration: Ernest L. Padilla
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I N D E X

MIKE FEAGAN

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E X H I B I T S

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MR. STOGNER: We will now call
Case 8683.

MR. TAYLOR: The application of
H. L. Brown, Jr., for special pool rules, Lea County, New
Mexico.

MR. STOGNER: We will now call
for appearances.

MR. PADILLA: Mr. Examiner,
Ernest L. Padilla, Santa Fe, New Mexico, for the applicant.

I have one witness to be sworn.
He has previously in Case -- in the previous case been sworn
and qualified, and ask that the record reflect that he has
been sworn and qualified in the previous case earlier this
morning.

MR. STOGNER: Is this one Mr.
Feagan that we're talking about here?

MR. PADILLA: Yes, sir, Mr.
Feagan.

MR. STOGNER: Let the record so
show that he has previously been sworn and qualified.

Are there any other appearances
in this matter?

If not, please continue, Mr.
Padilla.

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MIKE FEAGAN,

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

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Feagan, have you made a study of the Feather-Morrow Pool in connection with the application today?

A Yes.

Q Can you briefly tell us what the application seeks to accomplish?

A Yes, sir. We're requesting an increase in the gas/oil ratio limitation for the Feather-Morrow Pool. The pool is currently operated under a GOR limitation in accordance with Rule 506-A, which is 2000 cubic feet of gas per barrel of oil.

We're seeking to increase the GOR limitation to 10,000-to-1 for the Feather-Morrow Pool, and ask that it be retroactive to the date of establishment of the pool, which is April 1st, 1982, by Order Number R-6923.

Q Is that the date that the discovery well was completed in the Feather-Morrow Pool?

A Well, no, sir. The Feather-Morrow --

1 the State UTP No. 1 was completed as the discovery Morrow
2 oil well in September of 1981.

3 Q I see. But the pool was established on
4 April 1st, 1982.

5 A That's correct.

6 Q Can you tell us briefly -- give us a
7 brief history of your Feather-Morrow Pool? How many wells
8 are in the pool, and that sort of thing?

9 A Okay. The Feather-Morrow Pool is located
10 in the western portion of Lea County, New Mexico. It's in-
11 dicated in Figure 1.

12 And the State UTP, as I mentioned, was
13 completed as a discovery Morrow oil well in September of
14 1981. Development of the field continued with completion of
15 the State UTP No. 2 in September of '83, and the UTP, State
16 UTP No. 3 in September of 1984.

17 H. L. Brown, Jr. operates the State UTP
18 No. 3, while Sant Fe Energy operates the other two wells in
19 the pool.

20 As of June 1st, 1985, we had produced
21 201,305 barrels of condensate and 1.2 billion cubic feet of
22 gas from the Feather-Morrow Field.

23 Q That's from all three wells?

24 A That's correct.

25 Q Is that shown in Table I in your exhibit?

1 A Yes, sir, it is. As I mentioned, that's
2 as of 6-1-85.

3 Q Okay. What do Figures 2 and 3 of your
4 exhibit show?

5 A Figures 2 and 3 are indicating -- Figure
6 2 shows the -- just basically shows our cross section, Fi-
7 gure 3 is a south to north cross section.

8 Figure 3 is a cross section of the wells
9 and it's indicating that the three wells are all producing
10 from the Morrow, Feather-Morrow formation. It also indi-
11 cates that the UTP No. 3 has 28 feet of net pay, which is a
12 little bit more than the other two wells; appears to be a
13 little better on the log.

14 Q Does the fact that that well -- or that
15 that well is a better well than the other wells, is that
16 relative to this application?

17 A We feel it is. That's the reason that
18 we're bringing this up. Our well is a better well. It's
19 got a higher GOR currently, and that's the reason that we
20 need to increase the GOR limitation.

21 The other two wells have a high GOR, in
22 excess of 2000-to-1; however, they're producing a low enough
23 volume of oil that they're not affected by the GOR limita-
24 tion.

25 Q What type of reservoir are we dealing

1 with in the Feather-Morrow Pool?

2 A Well, from the pressure, volume, tempera-
3 ture, fluid data available from the Morrow, from the UTP NO.
4 1, we found that it's a retrograde condensate reservoir.

5 Q What does that mean?

6 A Rather than a black oil --

7 Q Okay.

8 A -- fluid system.

9 Q It's not a black oil fluid system.

10 A That's correct.

11 Q Okay. Now, do you have a copy of that
12 report attached to your exhibit?

13 A Yes, sir, the copy of the PVT study is --
14 done by CORE Laboratories -- is located in the back of this
15 exhibit.

16 Q Can you -- where does that show what type
17 of reservoir we're talking about?

18 A Well, it's described in the cover letter
19 of the -- of the study itself and -- I believe.

20 And what we're -- what we're saying that
21 this study is describing to us, is the elevated produced
22 gas/oil ratio shouldn't cause damage as long as it doesn't
23 exceed, materially exceed the laboratory PVT pressure deple-
24 tion study done by CORE Laboratories.

25 Q And that's relative to all three wells in

1 the pool?

2 A That's correct.

3 Q What other pressure data do you have in
4 conjunction with this Exhibit Number One?

5 A Actually the pressure, the PVT study was
6 used for a couple of different things. That's the only
7 pressure data that we got shown to us.

8 We -- we calculated initial wellstream in
9 place, which we found to be 14.3 BCF.

10 Using this in place volume and PVT, the
11 PVT study, theoretical gas/oil ratio versus cumulative gas
12 sales production was calculated. That's shown on Figure 4
13 with the red circles.

14 Q Will you refer to that Figure 4 and ex-
15 plain that to the hearing examiner?

16 A Yes, sir. The blue dashed line is the --
17 is the gas, monthly gas production versus the cumulative gas
18 sales.

19 The "X's" are our predicted future re-
20 covery by decline analysis.

21 Q Of gas?

22 A Of gas.

23 Q Okay.

24 A The solid black line at the bottom of the
25 figure is oil production, monthly versus cumulative oil pro-

1 duction, and again the black "x's" indicate a decline analy-
2 sis curve.

3 The dashed -- I believe that's a black
4 line -- is showing the GOR from our past production. The
5 "z's" indicate our predicted recovery based on this decline
6 analysis of the gas and oil.

7 Q What are the red dots again?

8 A Again the red dots are the -- based on
9 the PVT study of in-place volumes versus cumulative gas pro-
10 duction.

11 Q Okay. Where is the 10,000-to-1 line in
12 this chart?

13 A Where it shows T4th there to your righ-
14 thand side, and it's got the -- it's got GOR standard cubic
15 feet per stock tank barrel there written beside it and it
16 shows that we are currently at 10,000-to-1, or a little
17 over.

18 Q Okay, so you're -- you're already at
19 10,000-to-1.

20 A That's right.

21 Q Okay. Will that affect the production of
22 that well or cause waste in any manner, producing that well
23 at 10,000-to-1 GOR ratio?

24 A No, as long as we don't exceed our theo-
25 retical GOR presented to us by CORE Laboratories, we don't

1 feel like it will cause any waste.

2 Q Mr. Feagan, how is it that this came --
3 this case came to be? Why is it that you're applying for
4 this case today?

5 A Well, as I mentioned, the UTP No. 3 is a
6 better well than the UTP's No. 1 and 2, by virtue of the
7 volume of oil that we're producing, and based on the top
8 allowable of the field we're limited to 810 MCF a day.

9 We have -- had been producing the well at
10 160 barrels of oil, which is under the 410-barrel a day
11 limit for that pool, but our gas production has been 1.6
12 million as an average daily gas volume and that has caused
13 us to overproduce the wells.

14 Q How much are you overproduced?

15 A We're currently overproduced, or were as
16 of the end of May, 1985, 40.2 million cubic feet.

17 The reason we continued to produce this
18 thing is we were trying to gather some data for bringing
19 this GOR hearing up. We received a letter from Mr. Sexton
20 --

21 Q Is that letter attached to this exhibit?

22 A Well, the one I'm going to refer to first
23 of all is not attached to it. It simply states that they
24 concur that our well -- that -- well, first of all, they ap-
25 proved From C-105 for the No. 3 Well, and he concurs that

1 the well appears to be an oil well with a high gas/oil
2 ratio.

3 He asks that -- he said, since the wells
4 in this pool seem to be increasing in gas/oil ratio, we may
5 want to consider the possibility of going to a hearing to
6 obtain the increased gas/oil ratio limit for the pool.

7 Again, I did not include that letter, un-
8 fortunately, in this exhibit.

9 MR. PADILLA: Mr. Examiner, we
10 can submit that letter if you desire to --

11 MR. STOGNER: I would appre-
12 ciate it if you would.

13 MR. PADILLA: Okay.

14 MR. STOGNER: Make that part of
15 your Exhibit One package.

16 A Okay. We -- we took what Mr. Sexton said
17 as indicating that he would approve us overproducing the GOR
18 limit in order to gather some data. The thing that we
19 didn't do is decide upon a period of time that that data
20 should be gathered, and he assumed -- there is a couple of
21 other letters regarding our correspondence on this matter --
22 and he assumed --

23 Q Those are attached at the back of this
24 exhibit, is that correct?

25 A That's correct, they are attached in the

1 cubic feet per stock tank barrel as opposed to decreased
2 when we cut production.

3 Q So you're worse off, in other words, when
4 you --

5 A Our GOR is higher as we shut the well in,
6 we've found so far, than it is when we were producing at the
7 volumes that we were producing.

8 Q Does that mean you're liable to leave
9 some oil reserves in the hole?

10 A Well, we haven't determined that as such
11 that we will actually lose those reserves; however, we will
12 not be producing them at this time and we have not made a
13 study to determine whether the lower pressures will actually
14 cause us to lose that production.

15 Q But the GOR has not been affected?

16 A The GOR has not been affected.

17 Q In fact it's increased thereby curtailing
18 the production in the well.

19 A That's right. It just doesn't indicate a
20 2000-to-1 GOR.

21 Q Mr. Feagan, do you have anything further
22 to add to your testimony?

23 A No, sir, just that we would like to
24 request that the GOR limitation be raised to 10,000-to-1 for
25 the Feather-Morrow Pool to truly represent the fluid that

1 we're recovering out in that area.

2 Q Okay.

3 MR. PADILLA: Mr. Examiner, we
4 pass the witness for examination and we move the introduc-
5 tion of Exhibit Number One.

6 MR. STOGNER: Exhibit Number
7 One will be admitted into evidence.

8 MR. PADILLA: Together with the
9 additional letter that we submitted.

10 MR. STOGNER: Fine. That will
11 be made a part of Exhibit Number One.

12

13

CROSS EXAMINATION

14 BY MR. STOGNER:

15 Q Mr. Feagan, the first letter from Mr.
16 Jerry Sexton suggesting that H. L. Brown increase the gas-
17 /oil ratio came in September 17, 1984, is that right?

18 A Yes, sir.

19 Q When did this pool form? When was this
20 pool formed?

21 A It was April 1st, 1982.

22 Q What's been going on between September of
23 1984 and now? Why -- why are you seeking to increase the
24 GORs now and not back in '84?

25 A '84. Well, when the -- when the well

1 first came up, we were unaware of what the -- what the limi-
2 tations of 2000-to-1 would actually do to us. The well --
3 none of the wells have ever produced 2000-to-1 GOR; however,
4 the UTP No. 1 and 2 are unaffected by this limitation simply
5 because their oil production is not high enough to reach
6 this limiting factor and as we continued to produce the well
7 we found that our well was not going to drop in GOR; it was
8 not going to drop in oil production significantly to where
9 we would be limited by this GOR factor.

10 So we've continued production from that
11 point.

12 Q What would be the difference if this was
13 at -- if an order was issued not making the higher GOR ret-
14 roactive?

15 A It wouldn't affect us. We would make up
16 our overproduction on the manner that we're doing it now and
17 we would continue to produce the well at whatever the Com-
18 mission set the GOR limitation to.

19 The main reason we're making it retroac-
20 tive is simply just to be fair to the other wells. If there
21 was something that we're applying for in order for our well
22 that would -- they feel like would be helpful to them, then
23 we were just applying for that to be retroactive.

24 Like I said, the only thing that would be
25 a problem is that we would just need to possibly shut the

1 well in at a reduced rate until the overproduction is made
2 up.

3 Q How many wells are in the pool, did you
4 say?

5 A There are three wells currently.

6 Q And do you know what the other GOR ratios
7 are on the other wells?

8 A They're all over 5000 and in the neigh-
9 borhood of 5300 to 7000.

10 Q And within the year have these other two
11 wells shown an increase, also?

12 A Increase in GOR?

13 Q Yes.

14 A I have not made that study. I feel cer-
15 tain they have. The -- the oil production has continued to
16 go down in the two wells with the gas production staying
17 fairly constant, which would indicate an increased GOR.

18 Q Okay.

19 MR. STOGNER: I have no further
20 questions of Mr. Feagan.

21 Are there any other questions
22 of this witness?

23 If not, he may be excused.

24 Is there anything further in
25 Case 9683?

1 If not, this case will be taken
2 under advisement.

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4 (Hearing concluded.)
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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete and correct transcript of the proceedings in the Examiner hearing of Case No. 8683, heard by me on 28 August 1985.

Michael Stagner, Examiner
Oil Conservation Division