

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 9, 1963

EXAMINER HEARING

IN THE MATTER OF:

Case No. 2659 being reopened pursuant to the provisions of Order No. R-2347, which order established temporary 80-acre proration units for the North Babbley-Wolfcamp Pool, Lea County, New Mexico, for a period of one year. & Case 2658 being reopened pursuant to the provisions of Order No. R-2346.

Case No. 2659 &
2658

BEFORE: MR. ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

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CASE NO. 2659
& 2658

BEFORE: MR. ELVIS A. UTZ, EXAMINER

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MR. UTZ: Case 2659.

MR. DURRETT: In the Matter of the Case No. 2659 being
reopened pursuant to the provisions of Order No. R-2347.

MR. BRATTON: If the Examiner please, Howard Bratton
on behalf of the applicant. We have one witness.

(witness sworn)

MR. BRATTON: If the Examiner please, could we consider
also at the same time 2658?

MR. UTZ: It is the same area.



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MR. BRATTON: Same area and two different formations. I believe we could probably consolidate the testimony in them pretty easily.

MR. UTZ: We will consolidate 2659 and 2658. I don't know why we got them turned around there. For the purposes of testimony, only.

MR. BRATTON: If the Examiner please, we will take a look at 2658 first, the Upper Pennsylvanian, if that would be satisfactory.

MR. UTZ: All right, sir.

MR. BRATTON: If the Examiner please, we would ask that the exhibits in the original case be considered a part of the case on rehearing, and actually, we would refer to them substantially throughout the testimony.

MR. UTZ: Do you have additional data, insofar as this pool is concerned, in addition to what you had in the original hearing?

MR. BRATTON: Yes, we do, unfortunately.

MR. UTZ: And the data contained in this, in those exhibits in the first hearing will still be proven to be correct?

MR. BRATTON: Yes, it will be supplemented, I believe.

MR. UTZ: We will recognize the exhibits in the first case as a part of the record in this case.

W. M. SARGENT, JR.

called as a witness herein, having been first duly sworn on oath,



was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRATTON:

Q Will you state your name, by whom you are employed and in what capacity?

A W. M. Sargent, Jr., Cabot Corporation, Petroleum Engineer.

Q Have you previously testified before this Commission?

A Yes, sir, I have.

Q Did you testify before the Commission in connection with the original cases?

A I did.

Q Referring to your Exhibit Number One, in the original case, Mr. Sargent.

A This will be the one in 2658, marked on the front.

Q Now, that reflects the one well that was completed in the Upper Pennsylvanian at the time of the last hearing; is that correct?

A Yes.

Q All right, sir. Now, has there been another well completed in the Upper Pennsylvanian since that time?

A Yes, there has.

Q Where is that well located?

A Cabot's State M Number One in the Northwest of the Northeast of Section 22.



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Q That is a diagonal offset on the Southwest of the discovery well; is that correct?

A Yes, sir.

Q Have there been any other wells completed in the Upper Pennsylvanian in this pool?

A Yes, sir. The five wells which have been drilled in this pool, all five of them have been completed at one time in the Upper Penn. Three of them were abandoned because of excessive water production and recompleted in the Wolfcamp formation.

Q So, that you have actually two completed producing wells in the Upper Pennsylvanian?

A Yes.

Q Where are the other three wells that could not be completed and produced due to water?

A They are Section 23, in the Northwest of the Northwest, Southwest of the Northwest and the Northwest of the Southwest, all in Section 23.

Q Would you go through that slowly?

A It is Cabot's Humble State Number One well in the Northwest Quarter of the Northwest Quarter of Section 23, Cabot's State M Number One well, in the Southwest of the Northwest Quarter of Section 23, and Cabot's John R. Thompson Number One well in the Northwest of the Southwest of 23.

Q All right, sir. And all of those had to be very immediately abandoned because of water production; is that correct?



A Yes, that is correct, very shortly after completion.

Q Now, turning to your Cabot M well, when was that completed?

A The "M" well was completed in January, 1963.

Q All right, sir. And your discovery well, the Dallas well, was completed when?

A In June, 1963.

Q 1962?

A '62. I beg your pardon. '62, yes.

Q All right, sir. What was the original reservoir pressure in the Dallas well?

A 3,242 PSIG at 9100 feet.

Q What was your pressure obtained in the "M" well?

A The pressure on February 6, 1963, at 9100 feet was 2,486.

Q Was that your coring depth?

A At 9100 feet. Surface elevations are being approximately the same.

Q All right, sir. So, that you had a draw down of how many pounds pressure during that period of time?

A 756 pounds.

Q All right, sir. What has happened to your production in these two wells?

A These wells, the Dallas well from the date of completion through July, produced at top- - through June, 1963, produced



at top allowable. And July, this well fell rather sharply from top allowable and since that time has continued to decline at a rate, a rather steep rate.

Q What are those figures from, say, June on?

A June production on the Dallas was 5,269 barrels. Jule production, 2,371 barrels. August production, 1,541 barrels, September production, 977 barrels. As you can see, we have lost some 4300 barrels in four months.

Q All right.

MR. UTZ: Give me those first two months.

A June was 5,269. July, 2,371.

MR. UTZ: Thank you.

A Our State M Number One well begin producing in January, 1963, and produced at top allowable through May of 1963, at which time the well began to decline, at approximately the same rate evidenced by the Dallas well, although preceding it by approximately one month.

Q (By Mr. Bratton) What were the figures on it?

A In May, the "M" produced 5,369 barrels. June, 3,450 barrels. July, 1,419 barrels. August, 2,279 barrels, and September, 1,512 barrels. I might add in late July we did attempt a workover on the "M" well, and managed to raise the production slightly. However, it didn't hold.

Q To what do you attribute this rapid decrease in production?



A I attribute it to depletion of the reservoir.

Q Turn to your Exhibit Number One in the instant case.
Is that substantially your economic analysis?

A The economic analysis is shown at the bottom of the page,
yes.

Q All right. Now, are these based on your information
from both wells and best estimate you can make out of them?

A Yes, sir, they are.

Q Actually, our present rate of decline of these wells,
is there any possibility of the "M" well reaching an 80,000 barrel
production?

A Apparently not.

Q What is the total production to date on it?

A The "M" has produced 32,168 barrels through September.

Q And your Dallas well?

A It has produced 65,431 barrels through September.

Q It was completed approximately seven months prior to the
"M" well?

A Yes, sir.

Q Therefore, would you anticipate that it might make a
little more than the 80,000 barrels you anticipate in your analysis
and your "M" well would make considerably less?

A It is possible, yes.

Q All right. Therefore, your analysis there would be
approximately an average?



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A Yes. Possibly a little on the bright side.

Q Is there any possibility of economically developing further wells in this pool on a 40 acre spacing pattern?

A None.

Q In your opinion, are these wells draining in excess of 40 acres?

A Yes, I believe they are.

Q In your opinion, is this just a very limited reservoir in the Upper Pennsylvanian?

A It is.

Q Mr. Sargent, what has happened to your gas-oil ratios?

A Gas-oil ratios have reacted as from a solution gas drive reservoir. As the pressures have fallen, the gas-oil ratios have increased accordingly. Also increased rather sharply with the decline in production.

Q Is there any possibility recompleting either of these wells in the Wolfcamp?

A Yes, sir. The Dallas has the Wolfcamp zone present. The "M" well did not have the Wolfcamp.

Q So that you can come back up and try this, the Dallas well, on the Wolfcamp?

A Yes.

Q But, the "M" well is just going to have to recover what little it can out of the Upper Penn?

A That is correct.



Q Are there any other dry holes in the Upper Penn in this area, Mr. Sargent?

A Yes, sir. The Williamson Guy State Number One.

Q Where is that located?

A It is in the Northwest of the Northeast Quarter of Section 23. It was dry in the Pennsylvanian and Wolfcamp, Devonian. The dry hole shown in the Southwest of the Northeast of Section 22, the Sinclair One State, was a dry hole. However, they did not test the Pennsylvanian section in this particular zone. We do not know whether it is productive, or not.

Q This further substantiates your view that this is a very limited reservoir and that these wells are draining, or have drained a very substantial portion of it?

A Yes, sir.

Q Is there anything you care to point out in connection with your economic analysis and the reservoir information upon which it is based?

A In the original hearing we indicated there were two zones in the Upper Pennsylvanian. And these economics are based upon the combined recovery from the two zones. We have only produced this one zone primarily, because the lower of the two zones is heavily water productive. And would be strictly a salvage operation to go back into at this time. Possibly on the "M", when it is completely depleted, the upper of the two zones, we will attempt to pump it to see what characteristics the lower zone has



and whether it will economically produce oil.

Q You would not anticipate that on the Dallas then?

A Possibly we may on all of these wells, once the primary producing zones are depleted. We may go back into the lower zone if it proves economically feasible.

Q Is there anything else you care to point out in connection with the hearing on the Upper Pennsylvanian Pool?

A Only that these are Pennsylvanian zones which are very similar to the zones producing in the South Lane Pool, some three, four or five miles east-northeast of this area, which were recently granted permanent 80 acre spacing rules.

Q In your opinion, can one well in this pool efficiently and economically drain 80 acres?

A Yes, sir.

Q In your opinion, would the drilling of wells on less than 80 acres result in economic waste?

A Yes, sir. One would be foolhardy to do so.

Q All right.

MR. BRATTON: I believe we have nothing further on the Upper Pennsylvanian, if the Examiner would want to examine on it at this time, sir.

* * * *

EXAMINATION

BY MR. UTZ:

Q All right, sir. Mr. Sargent, the proof that you have

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here, unless I am missing something, that one well would drain more than 80 acres, is that this Number One well, the Dallas well, has already drained or recovered 65,000, and you have calculated only 40,000 reserve under a 40 acre tract?

A Yes, sir.

Q Other than that, you- -

A Well, I would point out the pressure difference between the initial pressure on the Dallas and the initial pressure on the State "M". There was some 700 pounds difference there.

Q That is the radius of drainage in excess of 80 acres?

A Yes, sir.

Q Insofar as you know, does Cabot have any intention of drilling any more Penn wells in that area?

A Not at the present time. We have- - we are not planning on drilling more wells. We have been trying to interest some of our offset operators in offsetting some of our acreage. However, we haven't been very successful in this. Based on what information we have now, we would not drill any more wells. It is too slim. I would say possibly if the South Lane Pool extended west so that we could drill in Section 14, then, we may drill in there. But, this would be a pool separate from where we are, separate by fault, some six or seven foot displacement.

MR. UTZ: Any questions of the witness?



EXAMINATION

BY MR. DURRETT:

Q Yes, I have got a question or two. Mr. Sargent, I am a little confused on one or two things. What did you say the accumulative barrels were on Well Number One?

A 65,431 barrels as of September 30th.

Q And that is the one that is dropping off very rapidly; is that correct?

A Yes, sir.

Q But, you think that by the time it gets down to where it has very little production that you have made your original calculated 80,000 barrels?

A Very possibly, plus we may recover some oil from the lower of the two zones in the Pennsylvanian. This would bring that total up to pretty close to the 80,000.

Q Now, what is this Mary Ellen Dallas well capable of making right now?

A Apparently it is not capable of making more than 35 barrels a day. September production amounted to 977 barrels.

Q So, it can't really make a top unit allowable for 40 acres, can it?

A No, sir, cannot.

Q As far as allowable is concerned, and the production you would recover wouldn't make any difference whether the 80 acre order was retained, or you went back to 40?



A Not unless the lower zone proved to be better than we think it is on pump test. We don't know what it can do on a pumping test. When it was completed originally, it was flowing.

Q What about that other well, what is the capability of it?

A The "M" apparently is about-- in September, it averaged 50 barrels a day.

Q So, it could still make a little more, at least, than a normal 40 unit allowable?

A No, sir. No. Normal 40 acres, it would be about 130 barrels a day.

MR. BRATTON: Depth factor.

Q (By Mr. Durrett:) So, it can't make it either, really?

A No, sir. No, sir. Neither one of these wells can make top for 80 or 40 acre allowable at the current time.

MR. DURRETT: Thank you.

MR. UTZ: Any other questions? You may proceed.

REDIRECT EXAMINATION

BY MR. BRATTON:

Q Turn then to the Exhibit Number One in the original hearing on the Wolfcamp zone. Now, at the time of that, you had the one well in the Northwest of the Northwest of 23 completed in the Wolfcamp; is that correct, sir?

A Yes, sir.

Q And I believe right at the time of the hearing, just



immediately preceding it, you completed one in the Southwest of the Northwest of 23?

A Yes, sir, that is correct. I believe it was just - just after the hearing last year.

Q Now, what other wells have been completed in the Wolfcamp and what other attempts at completions have there been?

A The only other well completed in the Wolfcamp was our Don Thompson Number One in the Northwest of the Southwest Quarter of Section 23. This is the only other well completed in the Wolfcamp and in which a try has been made to complete in the Wolfcamp.

Q All right. There have been no other attempts at completions in the Wolfcamp?

A No, sir, just these three wells.

Q Have there been any other dry holes drilled in the Wolfcamp, or where the Wolfcamp was absent?

A Yes, sir. Our State "M" Number One in the Northwest of the Northeast of Section 23. The Wolfcamp zone in this well was cored and was at this time impermeable. The Williamson Guy State Number One in the Northwest of the Northeast Quarter of Section 23 was dry in the Wolfcamp, and as far as we know, the Sinclair well in the Southwest of the Northeast Quarter of Section 22 was dry in the Wolfcamp.

Q Now, so that leaves a line running north and south where there is apparently potential Wolfcamp production; is that



correct?

A Yes, sir.

Q All right. What has been the performance and what is it since with regard to your three Wolfcamp wells, Mr. Sargent?

A The performance of these wells has been good to date. The Humble State Well has produced a total of 52,125 barrels through September, and is currently still producing at top allowable. Out State "M" Number One well has produced 33,840 barrels through September, and is still producing at top allowable.

MR. UTZ: How much was that?

A 33,840.

MR. UTZ: What was the other one?

A 52,125. The Thompson well has produced a total of 11,649 barrels through September, and is a marginal well at the current time.

Q (By Mr. Bratton) Is that the third well you drilled?

A Yes, sir.

Q In the Wolfcamp. What is the current total production?

A Apparently producing 20 barrels of oil per day.

Q All right, sir. Now, what do you base your permeability and porosity on; is that on the information from the Thompson well?

A Yes, sir. This is the information from a core in the Thompson well.

MR. UTZ: Where is the Thompson well located?



A It is in the Northwest of the Southwest of 23, immediately south of our State "M" One does not show on the map you have there, sir.

Q (by Mr. Bratton) It is the southern most of the three wells?

A Yes, sir.

Q All right. And it is the poorest producing well of the three by all odds?

A Yes, sir, it is.

Q And the information, your range of permeability on here is from it?

A Yes, it is.

Q Now, did you- -

MR. UTZ: I don't believe we have one of those exhibits.

MR. BRATTON: I am sorry. Excuse me.

Q (By Mr. Bratton) Mr. Sargent, what are you coming before the Commission on at this time, insofar as this Wolfcamp formation is concerned? Do you have drainage information, or is it strictly economics? What is your situation and what are you requesting and why?

A Well, we are requesting permanent establishment of temporary rules granted last year under this hearing, and however, we are basing it on economics more than drainage information as we actually have none. We have no pressure history as such, to show that there is drainage over 80 acres. Our wells are not



spaced on an 80 acre drainage pattern either. The economics of the Wolfcamp are break even without operating cost on 40 acre spacing. And this is assuming a rather good recovery for a solution gas drive reservoir of the 30 percent. 80 acre spacing would allow us to make a small profit on these wells.

Q Why don't you have a pressure information on that Thompson well, Mr. Sargent?

A The Thompson well was, as I said, in the other hearing, was originally completed in the Upper Pennsylvanian formation, which went to water rapidly. Was recompleted in an Upper Wolfcamp zone, which was not present and the Humble State, or State "M" wells, this zone within a week after completion died, either because it was depleted, or for some reason unknown to us. After much expense of workovers, the well finally was completed in the Wolfcamp zone which producing to the north. This zone is not as well developed as the Wolfcamp zone in the Humble State, or State "M" wells, as evidenced by his production characteristics and the fact that the drillstem test on this zone initially was not near as productive as the Humble State wells.

Q Are you afraid to fool around with the well any more after all the trouble you had with it?

A Yes, sir. We were afraid. We had perforated and squeezed numerous times and we were not sure even when we recompleted it that we had a completely successful squeeze on the Upper zone.



Q At this time, would you anticipate drilling any further wells in the Wolfcamp?

A No, sir, I would not.

Q In your opinion, Mr. Sargent, can wells be economically drilled on a 40 acre pattern in this pool?

A No, sir. I believe it would be just a matter of swapping dollars, if that.

Q You have anything further you care to point out in connection with your Wolfcamp application?

A I would like to mention that there is a well drilling in this pool at the present time, in the Southeast of the Northeast Quarter of Section 22. This being a direct offset to our State "M" well. My understanding that this well should be in or approaching the Wolfcamp formation this week.

Q Who is drilling that?

A Great Western Drilling Company is drilling that well.

Q So, somebody might drill some additional Wolfcamp wells but you wouldn't anticipate doing so?

A Not unless we are absolutely forced to.

Q Exhibits One and Two prepared by you or under your supervision?

A Yes, they were.

MR. BRATTON: We offer in evidence Applicant's Exhibits Numbers One and Two.

MR. UTZ: Exhibit Number One will be accepted as far



as Case 2658 is concerned. Exhibit Number Two in Case 2659.

MR. BRATTON: I believe that is all we have at this time, sir.

MR. UTZ: Any questions of the witness?

Actually, on your best well, you have only recovered approximately half of the reserve that is estimated to be in the Wolfcamp?

A Yes, sir. On 80 acre spacing.

MR. UTZ: How about the pressures in these wells, are they holding up?

A We have had no indication that they have begun to drop appreciably yet. I would say- - We have not taken pressures this year. However, the gas-oil ratios have not increased appreciably. In fact, on the Humble State Well, they have been dropping within the last four or five months. So, I would say that the pressures are holding up rather well.

MR. UTZ: What would you attribute their small rate of production to?

A On which well, sir? On the Thompson? The Thompson is the only well not making top allowable. The Humble State wells are making top allowable at the present time.

MR. UTZ: They are not top now?

A Yes, sir. The Thompson well, because of the formation, is not as well developed. Permeability is not, probably not as great as in the Humble State and State "M" wells. And that the formation there is not quite as thick as the Humble State or State



"M" wells.

MR. UTZ: You don't have a core data for the other two wells, just the Thompson?

A No, sir, I do not.

MR. UTZ: You anticipate the permeability to be better in those two wells?

A Yes, sir. I would say that it is based on production history.

MR. UTZ: As far as you know, this isn't a fractured reservoir?

A No, sir, I don't believe. We did run a fracture log in this Thompson and it did not indicate this zone to be fractured.

MR. UTZ: Any other questions? You don't have any dual completions in the Penn and Wolfcamp in that area?

A No, sir, we do not. We anticipate having to pump the Penn and therefore, with sub-surface hydraulic equipment. We did not feel we wanted to get mixed up with dual completions in this area on that basis.

MR. UTZ: The witness may be excused. Any statements? The case will be taken under advisement.

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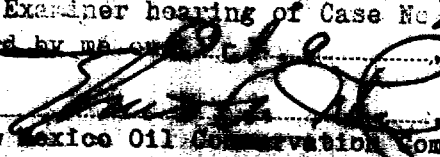
I, ROY D. WILKINS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal of Office, this 9th day of December, 1963.


NOTARY PUBLIC

My Commission Expires:

September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2658, 59 heard by me on 12/9/63, 19 63

Examiner
New Mexico Oil Conservation Commission

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