BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1734

TRANSCRIPT OF HEARING

AUGUST 5, 1959

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IN THE MATTER OF:

CASE 1734 Application of Kersey and Company for a water injection-oil production dual completion on an unorthodox location, and for an additional injection well. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Featherstone Well No. 2, located on an unorthodox location, 1060 feet from the North line and 250 feet from the East line of Section 29, Township 18 South, Range 28 East, Eddy County, New Mexico, in such a manner as to permit the injection of water into the Grayburg sand at approximately 2000 feet and the production of oil from the Premier zone of the Grayburg sand at approximately 2230 feet. Applicant further seeks authority to inject water into a new well to be drilled 330 feet from the North line and 990 feet from the East line of said Section 29. Applicant states that Graridge Corporation is presently injecting water offsetting this tract.

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: The next case will be Case 1734.

MR. PAYNE: Case 1734. Application of Kersey and Company for a water injection-oil production dual completion on an unorthodox location, and for an additional injection well.

Let the record show that the same Mr. Kersey is testifying who

testified and was sworn in the previous case.

HAROLD KERSEY,

recalled as a witness, having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. PAYNE:

Q Mr. Kersey, will you explain to the Examiner what you are proposing here?

A Yes, this 40-acre tract, namely, the NE/4 of the NE/4 of Section 29-18-28 offsets Graridge Corporation's flood in the NW/4 of Section 28-18-28, and presently the Graridge Corporation is injecting water into their No. 15 Well which offsets the tract in question. We propose to complete -- recomplete our No. 2 Well, as shown on the plat which I'll read the location of it. We propose to convert this well, located 1060 feet from the North line and 250 feet from the East line of Section 29-18-28 into a combination injection and production well. A packer will be set between zones. Now, we are presently producing this No. 2 Well through perforations from the 2000-foot zone which only makes a barrel or so a day, and also from the Premier zone. And then we propose to drill a new injection,Well No. 4, 330 feet from the North line and 990 feet West of the East line of Section 29-18-28. And we will reenter the No. 1 plugged and abandoned Well and make a producer out of it. It is located 1060 feet from the North and East lines of Section 29-18-28. And a new producer will be drilled, the No. 3 Well, 330 feet

from the North and East line of 29-18-28, and the casing program will be the same, will be 8 5/8, cemented through the fresh water with 4 1/2 inch casing in the new injection Well No. 4, and we already have 5 1/2 casing cemented in the producer No. 2. It is going to be a combination. And then the No. 1 and 3 will be conventional wells completed with 5 1/2 inch casing. We'll drill No. 3 Well shortly, and when an increase is noted on it, that is when we'll ask for approval to install injection Well No. 4. And we thought at this time we would also convert No. 2 Well into a combination producer and injection well. And the Graridge Corporation is furnishing water -- will furnish water for this project as well as for the one in the southwest part of Section 18-28. The zone is the same zone that is being flowed by the Graridge.

Q Is this Grayburg sand at approximately 200 feet which you propose to flood, is that the same common source of supply as this Premier zone and the Lower Grayburg?

A No, there is over 200 feet of hard lime between it, and the Premier zone is a different zone entirely. That is, the Premier produces over a large part of the Artesia Field, and this upper zone that we propose to flood produces over a much smaller portion.

Q What is Graridge flooding?

A They are flooding the upper zone of the Grayburg, and they are not flooding the Premier zone. This is a little bit off the record, but we are going to core our No. 3 Well when it is

drilled, and see what the possibilities of conducting a flood in the Premier zone would be at a later date.

Q Now, if there were communication between the injection interval and the producing interval of the Lower Grayburg, would that adversely affect the Lower zone?

A Well, in the particular well that we are going to convert, if we should have communication, immediately we'll start pumping water because we will be pumping from under a packer on this particular well. That is, it's got to be shut off in order for us to produce the well while it is being used as an injection well.

Q What is the producing mechanism in this Premier zone, is that a water drive field?

A No, it is a gas expansion. It is a lot of trouble to ~~plug~~ flood one 40-acre tract, but I believe economically it will be justifiable.

Q Now, even if you drill a separate well as an injection well rather than using this No. 2, you would still be flooding only the upper zone?

A Thatis right because we want to produce the lower zone.

Q Now, Graridge, to your knowledge, doesn't have any of these dual injections?

A No, Graridge unfortunately only has authorization to flood the first zone of the Grayburg in their deal, that's all. That's the scope of their authority to flood.

Q Now, do you know what the vertical limits of the Artesia Pool are? Won't they encompass both of these zones?

A Well, you could say that the Grayburg would encompass all of them, but the zones are definitely production horizons which can be easily identified from electric logs and from sample analysis.

Q But if you drilled a well in here, you would only get one allowable, wouldn't you?

A That is right, you would get one, and that's all we can expect is one allowable because of it being a Grayburg; the Grayburg is,for allowable purposes, is one zone.

Q But you don't feel there is communication?

A There is no communication. I've got too many wells producing in the Premier zone and not too many wells in this upper zone that we are talking about. In fact, we treated this No. 2 Well with sand oil and used Baker plugs and there wasn't any communication between zones.

Q Now, once you drill a well through both zones through there is communication by way of the well bore?

A There would be until you cemented it.

Q How long has the No. 2 Well been producing from the upper Grayburg and Premier zone together?

A Well, the history of this well, it was drilled about 1925 or 1926, this No. 2 Well, and it was plugged until early last year, and I went into it and opened it up and drilled it on down

into the Premier zone and then calipered the hole and saw that the shot hole was a size that could be cemented and perforated, and then I set casing through all the zones and cemented them, and I went ahead and perforated and threaded it.

Q This well had produced for quite a length of time prior --

A It had produced about fifteen years out of Grayburg.

Q Out of both of these zones?

A Well, the Premier out of the upper Grayburg. Now, the Premier hadn't been opened up until I opened it up.

Q In January?

A The first part of last year.

Q Are any wells offsetting this No. 2, offsetting the Premier zone?

A No, there are no wells to the Premier zone offsetting this No. 2. When I drill a well in this area, or any area in the Artesia Field, I test all zones to the San Andres, and I don't know that there will be any production in the base of the Grayburg, but it is well worth while to test it whenever you do any work, and I found some oil in the lower zone.

Q (By Mr. Utz) You don't know of any others?

A I don't know of any others, and I'm going to check it when I have the opportunity because it is a good prospect for another flood.

Q Actually, the Grayburg and the Premier are two different pools?

A That is right. I might call your attention to the fact that there is another zone in between that didn't show much in this well and that's called the Mattix. It's another Grayburg zone.

MR. PAYNE: Do you have the gravities from the oil in both of these zones here?

A It runs around 36 gravity both zones.

Q In each?

A In each. It varies a point up and down, depending.

Q What about the pressures?

A The pressure was gone in the Grayburg zone, but we had almost enough pressure, and if we hadn't opened up the first Grayburg zone, the Premier would have flowed. There was enough bottom hole pressure left when they drilled it.

Q (By Mr. Utz) Actually, then, to complete these two zones together would constitute waste, wouldn't it?

A In reality, it would constitute waste. The best procedure would be to perhaps complete the Premier and let it equalize to the pressure, exhaust the pressure in it before producing the upper Grayburg.

Q Do you think when you set a packer in the Premier it will flow?

A It could. I don't know. There is a possibility it will flow.

MR. PAYNE: Now, it is possible, is it not, that if there were communication between these two zones that the water

injection which got down to the second zone would push the oil away from this --

A No, if we had communication yes, you would start; if we weren't pumping this zone, which we will be, and for some reason or other, communication took place, the oil could start a flood in the Premier zone and shove it away from the hole, but we'll be pumping which will be -- we'll have perfect control on that particular well from it because of it being produced.

Q Does that zone make any water now?

A Makes a little bit of water.

Q Well, if there were communication, would you be able to tell from the production from the Premier zone that such communication was occurring?

A Yes, because possibly at the present time it makes two or three barrels a day, and if a packer leaks, which we've had quite a few on other floods happen, the production would probably, the water production would jump to a hundred barrels a day or some big figure right quick because when those things give way they are gone.

MR. UTZ: What kind of surface injection pressure do you anticipate?

A I anticipate a thousand pounds.

Q That's on the packer, you'll have something in the neighborhood of 2000 pounds pressure?

A That is right. I use the Baker -- I don't remember the

number of it, use a Baker packer between the two zones.

Q A permanent type packer?

A A permanent type packer.

Q Model "D?"

A Model "D," I believe it is.

MR. PAYNE: How much reserve do you estimate you have in the Premier zone under the 40-acre tract?

A I estimate as much reserve in the Premier as the first Grayburg zone. The determining factor will be there, the extent of the Premier zone. So far as I know, that's the only well in it, and whenever we drill other wells or other wells are drilled in the area, then we can tell if it will cover the whole tract, but the Premier is the best producing zone in the Grayburg in the Artesia area. It is by far the best zone. It is the zone we are flooding in Red Lake and is the zone that Eumont is getting ready to flood in Square Lake.

Q How much oil did you say this No. 2 was making now from the --

A About 16 or 17 barrels a day.

Q That's perforated in both --

A Perforated in both, and we estimate about a barrel from the upper zone. We tested it before we drilled on down and that's what it would make and it didn't increase any.

Q Do you think it might be safer not to squeeze off this lower zone until you finish flooding the upper zone and then go

back in?

A I don't think so, since we are going to be producing, I don't. If the well were going to be setting there static, I would say yes, but economically we are getting the oil now and I think, and I'm sure we will keep right on obtaining it.

Q Well, now, if you had this No. 2 Well, if it were authorized as an injection well and producing well, and the time came when you had to ask for a capacity allowable for this well, how do you know how much of it is coming from the Premier and the upper zone?

A Well, now, this well will never be a producing well from the Grayburg, upper Grayburg.

Q So long as you have a capacity allowable for a well rather than 40-acre tract, it wouldn't matter?

A No, because whatever we get out of it it will decline as time goes on, and it is just -- it is a help from the economic standpoint.

MR. UTZ: Have you lost a packer between these two zones? Injecting the 2000 pounds of pressure, you would just about lose your Premier zone?

A You mean if something happened to the packer?

Q Yes.

A No, I'll tell you why it wouldn't. I have been using water, in fact, I fraced this well with water and then I fraced quite a few other wells with water, and immediately, if we lost a

packer we would know it and shut the well off,and water in a zone like that, in my opinion, that's contrary to the old concept, and I had a concept for years that water in an oil zone was detrimental, but we have used it pretty successfully for fracing, and I can't see where if it got some water, it would hurt anything.

MR. PAYNE: Now, the No. 3 and No. 1 which would eventually be producers, is that right --

A That's right.

Q -- you intend to perforate them only in the upper zone?

A Probably at the present time because I want to check to see what the flood is going to do, but eventually I want to produce the Premier zones in those wells, and the only way I can tell what the flood is doing is by not producing them at the present time, when I drill them.

Q What Section is the Graridge No. 15 Well perforated in?

A It is perforated in the Grayburg Section.

Q The upper Section?

A Now, that No. 15 Well was an old well that they went into, and I believe that that well, the casing was set right on top of the zone rather than through it, that's the best I can remember, because the shot hole was too large in order to set the pipe through it.

Q Would you call this a pilot water flood project or would you call it the edge of a water flood project in existence?

A I would call it the edge of a water flood already in existence.

Q All right. You never intend to expand this particular flood?

A That's all the acreage I have there, so I want to utilize it to the best advantage, and that was the only way I knew how to do it.

Q Who owns this producing well directly to the south?

A Graridge.

Q Graridge?

A Graridge, yes.

Q And that would remain a producing well?

A That would remain a producing well, that is right, and they are going to possibly have to think about expanding their flood over in that area if the production -- if they don't get on the edge. The edge is going to be reached there at any time. That is, the edge of the field.

Q Now, your proposed injection rate is about the same?

A Our proposed injection rate is about the same as the other flood, that is right.

MR. PAYNE: That's all.

MR. UTZ: If you lost a packer between these two zones after you put several thousand gallons in there, presumably it would be kind of hard to shut off, wouldn't it?

A See, you are setting the packer in casing, and it will be set on slips, and if you were depending on formation, I would say yes, but since it is setting in casing, if it did give way, you

could pick a new casing seat three or four, five feet, wherever you want it because there is a lot of room between zones.

MR. UTZ: Any other questions?

MR. PAYNE: Frank, do you have any questions?

QUESTIONS BY MR. IRBY:

Q Your casing specifications are the same on these wells as in the previous case?

A That's right, the same.

Q Mr. Kersey, could you furnish me with Exhibits that you have in this case?

A Sure can.

MR. IRBY: That's all. Thank you.

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

(Witness excused)

MR. UTZ: Any other statements to be made in this case? Case will be taken under advisement and the hearing is adjourned.

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 14th day of August, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1234, heard by me on August 5, 1959.

New Mexico Oil Conservation Commission, Examiner