BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 1521

TRANSCRIPT OF HEARING

OCTOBER 2, 1958

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BEFORE THE
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IN THE MATTER OF:

CASE 1521 Application of Humble Oil and Refining Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its New Mexico State "V" Well No. 1, located 660 feet from the South and West lines of Section 10, Township 21 South, Range 37 East, Lea Coutny, New Mexico, in such a manner as to permit the production of oil from the Blinebry Oil Pool and the Drinkard Pool through parallel strings of 1½ inch tubing.

BEFORE:

Mr. Elvis A. Utz, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. UTZ: Case 1521

MR. COOLEY: Case 1521. Application of Humble Oil and Refining Company for an oil-oil dual completion.

MR. HINKLE: I am Clarence Hinkle, representing Humble Oil and Refining Company. We have one witness to be sworn, please.

MR. UTZ: Any other appearances to be made in this case? If not, you may proceed.

(Witness sworn)

B. K. BEVILL,

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

as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, please.

A B. K. Bevill.

Q By whom are you employed, Mr. Bevill?

A Humble Oil and Refining Company.

Q In what capacity?

A District engineering, Hobbs District.

Q Are you a graduate engineer?

A Yes.

Q What school?

A Louisiana State University.

Q What year did you graduate?

A 1936.

Q Have you been with Humble since your graduation?

A Since graduation.

Q How long have you been in the engineering department of Humble?

A Twenty-one years.

Q How long have you been in New Mexico?

A A little over a year.

Q Are you familiar with their operations in Southeastern New Mexico?

A Yes, sir.

MR. HINKLE: Are the witness' qualifications acceptable?

MR. UTZ: They are.

Q Mr. Bevill, are you familiar with Humble's State "V" Well No. 1, which is located 660 feet from the South and West lines of Section 10, Township 21 South, Range 37 East, Lea County?

A Yes, sir.

Q Have you prepared yourself or had your staff under your direction prepare a plat showing the location of this well?

A Yes, sir.

Q I refer to Humble's Exhibit 1 and ask you to explain to the Commission what it shows?

A Exhibit 1 shows Humble's State "V" Lease, and it also shows the Blinebry gas participation encircling that Lease. And you will note that the southwest one quarter of Section 10 has no gas participation on the Blinebry.

Q All the rest of the wells shown are Blinebry gas wells?

A All the other wells shown on that particular lease are Blinebry gas wells.

Q Refer to Humble's Exhibit 2 and explain what that shows.

A Exhibit No. 2 is like Exhibit 1. It shows Humble's participation in the Drinkard Oil Pool as compared to surrounding offset leases in the Drinkard.

Q Does it show all the wells surrounding the Humble acreage?

A Yes, sir.

Q That's the same acreage as referred to on plat 1?

A Yes, sir.

Q And all of those are oil wells?

A All are oil wells. You'll note there that Humble's No. 1 -- State "V" No. 1 is encircled in red. It actually is completed in the Drinkard, but it is now shut in, and it has been shut in since --

Q Give the Commission a brief history of State "V" No. 1 -- Humble's State "V" No. 1.

A State "V" No. 1 was completed in 1948 as a Drinkard oil well, and it remained as such until July, 1957, when we received a permit to dually complete this well as a Drinkard oil well and Blinebry oil well. There was no reason in the world why we shouldn't suspect that the well would make a good Blinebry gas well, but in so doing, instead of making a gas well, we came up with an oil well which gave us a dual oil-oil, which at that particular time was not permissible. So we plugged the Blinebry and maintained completion in the Blinebry gas.

Q Did you plug it completely or --

A Mechanically plugged, temporarily plugged.

Q Have you prepared a plat which shows the manner in which it has been plugged temporarily?

A Yes, sir.

Q Refer to Exhibit 3, Humble's Exhibit 3, and explain what that shows.

A Exhibit 3 shows how the well is now. equipped mechanically. It has one string of two inch tubing, Baker Model "D" packer set at 6,552 which is in between the Drinkard zone and the Blinebry zone. Below the packer is a circulating sleeve. There is a PSI blanking plug above that. There is a tubing receptacle right along the packer, and then on up into the tubing string there is another circulating sleeve at 6,484, which allows Blinebry production to come down through the upper circulating sleeve and out through the tubing, leaving the Drinkard zone shut in.

Q What is the interval between the Blinebry and Drinkard zones, the perforations?

A Approximately 900 feet.

Q Now, you are familiar, of course, with this application which has been filed by Humble, and state to the Commission the purposes of the application -- of this application.

A This application is for the purpose of running two parallel strings of inch and a half tubing to allow us to produce the Drinkard zone, place it back on production, and also produce the Blinebry oil zone.

Q In other words, to dually complete both oil zones?

A Yes, sir.

Q Now, have you prepared yourself or under your direction a plat showing the manner in which you propose to dually complete these two oil zones?

A Yes, sir.

Q Refer to Humble's Exhibit 4, and explain to the Commission what it shows.

A In Exhibit 4 you will notice two strings of tubing. The one I will refer to as a long string runs down through the Baker Model "D" packer which we will leave in place at 6552. And below that is a circulating sleeve valve which we can open or close, and above that a tubing receptacle. Immediately above the tubing receptacle there will be a setting nipple. And immediately above the Blinebry zone at approximately 5,680 feet, we will have a dual string tubing anchor. It will be an integral part of the long string, and the short string, which will produce from the Blinebry zone, will be anchored to the dual string anchor. The two tubing strings we propose to be one and a half inch non-upset tubing.

Q In your opinion, can the two zones be effectively and efficiently produced by this method?

A Yes, sir.

Q Is this a method which has been generally accepted and used in the oil industry?

A Yes, sir.

Q And has been effectively used?

A Yes, sir.

Q And there is very little chance of commingling of the two zones?

A It can be effectively sealed. There is some possibility,

but you, of course, eliminate that by a packer test.

Q There is something that can be done mechanically?

A Yes, sir.

Q Is there anything else you would like to state to the Commission with respect to this proposed dual completion?

A No, sir, only that it will work.

MR. HINKLE: That's all. I would like to offer Exhibits 1 through 4 inclusive.

MR. UTZ: Without objection, they will be received. Are there questions of the witness?

CROSS EXAMINATION

BY MR. FISCHER:

Q Mr. Bevill, could you give us the gas-oil ratio of each zone, if you have them?

A The gas-oil ratio in the Drinkard in No. 1 is 10,540 in the last test. The gas-oil ratio in the Blinebry, the last test was 1,974.

Q Do you contemplate that you will have to be pumping both of these zones to start with?

A That is one of the reasons we are running this tubing anchor, dual string tubing anchor and sitting nipples. We do not contemplate that we will have to artifically lift these wells, but in case we do, we will be prepared.

Q What type of artificial lift would you use, if you had to?

A Rod pumping.

Q Is that feasible in one and one-half inch tubing?

A It can be done.

Q What size rods do you think you will --

A We can use five-eighths rods with turned down couplings.

Q Would you think that you'd need a gas anchor on both those pumps?

A Under the circumstances, it would be almost impossible to run a gas anchor in the lower zone. However, we, as I said before, we don't ever expect to have to pump these wells.

MR.FISCHER: Thank you.

MR. UTZ: Any other questions of the witness?

QUESTIONS BY MR. COOLEY:

Q Mr. Bevill, on your Exhibit No. 1 you show the offsetting Blinebry units. Are any of those oil producing units?

A No, sir, they are all gas units. If I understand your question right, what they represent on this particular plat.

Q Well, are the offsetting wells oil wells or gas wells?

A They are gas wells on that chart, Exhibit No. 1.

Q Then Humble's State "V" No. 1 is the only oil well in the immediate area completed in the Blinebry?

A That is right.

Q Your State "V" Lease is not dedicated to any well in the Blinebry at the present time, is it?

A The W/2 of it is.

Q Which would that be?

A That would be our Blinebry Tubb gas unit No. 1 there.

Q Oh, excuse me. That's the SE/4 of 10?

A Yes, sir.

Q I was looking at the Humble State "V" Lease as comprising only the SW/4. The SW/4 is not dedicated to a gas well, is it?

A Right.

Q Assuming for the purpose that it were not possible to dually complete these wells, which zone would you produce then?

A Blinebry.

Q Produce the Blinebry?

A Yes, sir.

Q Why is that true?

A Actually, the Drinkard is -- you might classify it as sorry -- I mean as a whole. This well with a gas-oil ratio of 10,540 will give us an allowable of approximately 12 barrels, whereas in the Blinebry we are enjoying full allowable.

Q What stage of depletion did you say the Drinkard zone was in?

A Beg pardon?

Q What stage of depletion is the Drinkard zone in at the present time in your Humble State "V" No. 1?

A I would say that it is possibly between 60 and 70 percent depleted. It is a gas expansion type reservoir.

Q If you are required to leave the Drinkard shut in, what will happen to you with the Drinkard?

A Well, in order to participate in Drinkard production, it is not worth drilling. A Drinkard well will cost somewhere in the neighborhood of $90,000.

Q You are offset by Drinkard production by other companies, are you not?

A We are, if you will note to the north in several spots. However, I would like to make note that the Humble drilled one dry hole to the Drinkard. Actually, if you look on Exhibit No. 2, it is to the east of the Tidewater State Lease, that little 40-acre lease there. There was a well drilled to the Drinkard and tested dry and was plugged and abandoned. And then to the north in one of the -- our deeper wells, the Drinkard was tested, and it was very unsatisfactory. There is a possibility that at some later date we might come back and try to recomplete there.

Q The Tidewater No. 1 Well is immediately south of the subject well, isn't it?

A Yes, sir.

Q Is it a dual completion, the Tidewater No. 1 Well?

A No, sir, I don't think so.

Q Do you have any calculations as to what friction loss would be using one and a half inch tubing as compared with standard two and three-eighths?

A No, sir, I don't have any.

Q There would be some, wouldn't there?

A One and a half against two inch tubing, nominal two and three-eighths?

Q Yes, sir.

A There would be some. However, we have in the past used small strings of tubing to maintain natural flow on sluggish wells. Due to less leakage you get better efficiency out of your gas.

Q Would the Drinkard zone -- the present characteristics on the Drinkard completion in this well lend itself to this small type of tubing?

A I would think so.

Q The quantities of liquid produced will be rather small?

A There will be no restrictions that I could see. About 10 or 12 barrels a day.

Q Now, going to the Blinebry zone, what will be your normal expectant flow through that string of tubing?

A Actually, we have no idea. This is a rather freak Blinebry well that has been producing very strongly for over a year, and actually the gas-oil ratio has been gradually creeping up. It may go on to excessive rates. We don't anticipate ever having to pump it.

Q What is your present daily allowable on your Blinebry completion?

A Blinebry, I believe, is 47 barrels.

Q Producing that quantity from the depth of which you are

working there, would result in a material reduction in efficiency, flow efficiency due to the size of the tubing?

A I don't think so, no, sir.

MR. COOLEY: That's all the questions I have.

RECROSS EXAMINATION

BY MR. FISCHER:

Q How is your Drinkard zone presently closed off, Mr. Bevill?

A It is shut off in two ways. The circulating valve is closed, and we also have a plug in it.

Q With your experience with the Drinkard Pool, do you think it is just as easy or just as economical to deplete the Drinkard zone by allowing it to flow to depletion rather than attempt to pump it under a packer?

A I see no reason for trying to pump it if it will flow. As a matter of fact, I don't see how you could.

Q I mean for cost of the pumping equipment, if it ceased to flow, do you think it would be economical to put that pumping equipment in?

A Considering salvage value, yes.

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

QUESTIONS BY MR. UTZ:

Q Mr. Bevill, I take it that you feel that the flow efficiency through the inch and a half tubing will be better than it would be through two and three-eighths?

A Under certain circumstances. Now, you will be restricted as to volume, but the flow efficiency will be increased.

Q Due to the lack of slippage?

A Yes, sir.

Q Lessening of slippage --

A Yes.

Q -- and friction loss which would be due to the smaller diameter tubing, would it affect you on making your allowables on these wells?

A No, sir, not unless we produce large quantities of water along with the oil, and we don't anticipate that.

Q Did you give the gravity and pressure of each of these zones?

A Strange as it may seem, the gravity of the Drinkard and the Blinebry zones are both very -- almost the same; run from 38 to 40. What was the other question?

Q Pressures -- bottom hole pressures, if you have them.

A The bottom hole pressure in the Blinebry, the latest bottom hole pressure was 1,760 pounds, and I don't have it on the Drinkard, but it is around 970 pounds.

Q And you would be willing to run any tests to determine separation of these zones in any manner the Commission prescribes, would you not?

A Yes, sir.

MR. UTZ: Are there any other questions of the witness?

MR. COOLEY: Just one other question. Is it possible to get into these zones through this inch and a half tubing to heat it or treat it, if necessary?

A Yes, sir.

MR. COOLEY: That's all.

MR. UTZ: Any other questions? If not, the witness may be excused.

(Witness excused)

MR. UTZ: Any other statements to be made in this case? If not, the case will be taken under advisement,and the hearing is adjourned.

C E R T I F I C A T E

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/or under my personal supervision, 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 9th day of October, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. 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. 1521, heard by me on 10-7, 1958.

Examiner
New Mexico Oil Conservation Commission