BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JUNE 22, 1960

IN THE MATTER OF:

CASE 1991 Application of Texaco Inc. for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its C. P. Falby "B" Well No. 3, located in Unit M, Section 8, Township 22 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce oil from the Eumont Pool and oil from the Penrose-Skelly Pool through parallel strings of one-inch O.D. tubing and 2 1/16 inch O.D. tubing respectively.

BEFORE:

Daniel S. Nutter, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. PAYNE: Case 1991. Application of Texaco Inc. for an oil-oil dual completion.

MR. WHITE: If the Examiner please, Charles White of Gilbert, White & Gilbert, Santa Fe, New Mexico, appearing on behalf of the applicant. I have one witness to be sworn.

(Witness sworn)

(Whereupon, Texaco's Exhibits Nos. 1 through 5 were marked for identification.)

J. E. ROBINSON, JR.

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Robinson, would you state your full name?

A J. E. Robinson, Jr.

Q By whom are you employed and in what capacity?

A Texaco, Incorporated as division proration engineer.

Q Have you previously testified before the Commission as a petroleum engineer?

A Yes, sir, I have.

Q Have your qualifications been acceptable?

A Yes, sir, they have.

Q Mr. Robinson, are you familiar with the subject application?

A Yes, sir, I am.

Q Will you refer to what has been marked as Exhibit No. 1, being an ownership plat, and explain that, please?

A Exhibit No. 1 is an ownership plat where we have outlined in the yellow border Texaco's Falby "B" lease located in Section 8, 22 South, 37 East, Lea County, New Mexico. We have our Well No. 3 which we propose to dually complete by running parallel strings of 2 and 1/16 inch hydril . and 1 inch hydril . to be completed as a Penrose-Skelly and a Eumont oil well.

Q Will you give the engineering planning of the well and

also a brief history of the well?

A This well was set up to be drilled as a dual completion from the Penrose-Skelly, which would be an oil well and the Eumont gas. We proposed originally to set 4 and 1/2 inch casing at T.D. We would complete the Penrose-Skelly by pumping through 2 and 3/8 inch tubing, and we would flow the Eumont gas up the tubing casing annulus. Our geological information showed that this well would be drilled on a high for the Eumont gas. There are several Eumont gas wells in the immediate area, and none of these wells were producing any large amounts of oil. They were all gas wells. So, that is the reason that we set this well up to be drilled as a dual completion to flow the Eumont gas up the tubing casing annulus.

Q Is your testimony further substantiated by Exhibit 2, and, if so, identify and explain that, please?

A Yes, sir. Exhibit No. 2 is a Form 9-3 31-A, which was submitted to the U.S.G.S. on April 7, 1960, wherein we proposed on our casing design to set 7 and 5/8ths inch 24 pound casing, surface casing at 330 feet, and we would cement this with 200 sacks of cement. Then, we would set 4 and 1/2 inch casing of 9 and 1/2 pound to be set at 3800 feet to be cemented with 300 sacks of cement, and we would dually complete this well as a Penrose-Skelly oil in the Eumont gas. It was approved by Mr. J. L. Gordon, the acting district engineer, on April the 8th.

Q Mr. Robinson, did Texaco, before drilling into the Eumont, have any reason to foresee the possibility that this well

might be brought in as an oil producer rather than a gas well?

A No, sir, we had no indication whatsoever that we would get oil from this zone. As I previously stated, all wells in this area were completed as gas wells, and we were drilling on a high. We would be drilling some twenty to thirty feet higher than some wells that were or are presently completed in the Eumont gas pool.

Q Would you explain the present condition of the well and your proposed completion, and in so doing, refer to Exhibit No. 3, the diagrammatic sketch?

A Exhibit No. 3 is a diagrammatic sketch showing our proposed dual completion installation. It shows that we set our 7 and 5/8ths inch casing at 329 feet, with the cement being circulated. We drilled to a T.D. of 3800 feet, and cemented this with 300 sacks of cement, with the cement being estimated at a top of 650 feet. We perforated the Penrose-Skelly through five sets of selected perforations, and then we perforated the Eumont Penrose through four sets of selected perforations, and after we did this, then we completed the zone as an oil zone. Now, we have presently set a Baker Model "D" packer at 3650 pounds. Before this Baker packer was set, we put an expendable plug in the packer. When we dually complete the well, we will set down on it with our 2 and a 16th inch hydril, and it will take approximately 4000 pounds of pressure to shove this expendable plug on through the packer. Then we will run a 1 inch string of hydril where we will flow the Eumont oil up the 1 inch hydril string, and we will pump the Penrose-Skelly Grayburg

formation through the 2 and 16th inch hydril. The 2 and 16th inch hydril will be latched in to the Baker Model "D" packer. However, the 1 inch hydril will swing free in the well since at no time do we expect ever to have to pump this Eumont oil. We think that it will flow to its economic limit,and also from the performance of the Eumont as we complete this reservoir, we think that we will start getting an increase in our gas-oil ratio as we believe that we are completed in a localized oil ring, and as we deplete, the gas-oil ratio will increase.

Q Will you refer to Exhibit No. 4, and state the reservoir properties?

A Exhibit No. 4 shows the reservoir properties for both the Eumont oil and the Penrose-Skelly pools. The Eumont oil is a sour type crude. It has a GOR of 5,005 cubic feet per barrel. It has a gravity corrected as sixty degrees API of 33.5. The well was completed on an actual eight-hour potential, flowing 72 barrels of oil in eight hours with no water. We do not have any pressures on this zone at the present time. We will run bottom hole pressures and all flowing pressures when we run our packer leakage test. The Penrose-Skelly also has a sour type crude. The gas-oil ratio was too small to measure on a swabbing test. It has a gravity of thirty-eight degrees with an estimated swabbing test of 34 barrels of oil per day with 160 barrels of water. We have not run the bottom hole pressure on this zone, and we will pump the zone when completed.

Q Now, will you explain your acoustical log, please?

A Exhibit No. 5 is a Lane Wells acoustical log which we ran on the well. The left hand side is their gamma ray log with the velocity log on the right hand side. We have marked the top of the upper zone, the Penrose Eumont oil, at 3468 feet. We have four selected perforations in this zone which I have marked from 3468 to 3490, and from 3498 to 3508, and from 3530 to 3544, and from 3562 to 3567. The lower zone, the Grayburg zone of the Penrose-Skelly pool has five sets of perforations which I have marked from 3684 to 3692, 3698 to 3710, and 3716 to 3737, from 3750 to 3762, and from 3782 to 3795. We have selected the most permeable streaks in these zones and selectively perforated them.

MR. WHITE: If the Examiner please, in our application we referred to Exhibit A and incorporated that in our application. That was a completed form for dual completion under the Commission's printed form. If you desire, we can introduce that in evidence or let it stand as a part of the pleadings as Exhibit A.

MR. NUTTER: This will be entered into the actual record of the case, Mr. White.

Q (By Mr. White) Were Exhibits 1 through 5 prepared by you or under your direction, Mr. Robinson?

A Yes, sir, they were.

MR. WHITE: At this time we offer the Exhibits 1 through 5.

MR. NUTTER: Texaco's Exhibits 1 through 5 will be

entered.

(Whereupon, Texaco's Exhibits Nos. 1 through 5 were received in evidence.)

MR. WHITE: That completes our direct examination.

MR. NUTTER: Does anyone have any questions of Mr. Robinson?

MR. PAYNE: Yes, sir.

MR. NUTTER: Mr. Payne.

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Robinson, is either zone producing at the present time?

A Yes, sir. At the present time we have 2 and a 16th inch hydril where we are producing the Eumont oil.

Q You have 2 and a 16th?

A Yes.

Q And you propose to change that installation and use a 2 and 1/16th to produce the Penrose-Skelly?

A Yes, sir.

Q And 1 inch to produce the Eumont?

A That is correct, yes, sir.

Q I presume that the Eumont is a top allowable oil well, is that right?

A Yes, sir, it is. It has a gas-oil ratio of 5005 whereas the gas-oil ratio limit of the Eumont is 10,000 to 1.

Q Do you anticipate any problems in the production of top oil allowable from the Eumont through 1 inch tubing?

A No, sir, we do not. As I have previously testified, we think that this zone will flow to depletion through the 1 inch hydril.. I have calculated the pressure drop that would occur by producing through 1 inch hydril.. We have a pressure drop of 14 pounds per thousand foot, or we would have a pressure drop of 49 pounds for 3500 feet. We do not expect to have any difficulty at all in producing this flowing zone through 1 inch hydril..

Q Mr. Robinson, is the southwest quarter of the southwest quarter of Section 8 presently dedicated to a Eumont gas well?

A It was on our initial C-128 that we submitted;along with our drilling application we designated that. However, we will now designate the 40 acres surrounding Well No. 3 as a Eumont oil well.

Q Well, are there any other Eumont gas wells located on Section 8?

A No, sir,there are none.

MR. PAYNE: Thank you.

BY MR. NUTTER:

Q I suppose this well has changed your geological picture of what the Queen sand looks like, correct?

A It hasn't exactly changed our structure interpretation. However, it has changed our thinking that as long as you drill on a high, you'll always get gas. I think this more or less kind of

confuses all of our petroleum engineers and our geologists, too, as to why we should go up high on structure and get oil.

Q You did encounter the Penrose sand high as expected?

A It did not run as high as we had expected. It dropped off about 30 feet. However, we completed this well higher than some of these local Eumont gas wells that are producing gas where we got oil.

Q Do you expect that this will actually be low on the structure, or is it just a little synclinally low where there may be an acceleration of oil?

A Well, we think probably there's just a small ring there, and in order probably to get this small ring, we'd either have to have a very small closure there or some type of a comparable barrier between this well here and some of the offsetting wells there that would trap this small oil ring.

Q Now, I note on your Exhibit 1, Mr. Robinson, over here in Section 2, there are two Eumont gas wells; there appears to be one in Section 18. I don't see any other Eumont wells depicted on this Exhibit. Are there any, except your No. 3?

A In Section 7 there are two Eumont gas wells. In Section 18 we only have one shown. However, Gulf has recently completed this Christmas "C" Well No. 7, I believe, as a Eumont gas. They also have a Well No. 5, which is not shown, in Section 18, that are Eumont gas wells, as well as two other wells located in the south half of Section 18 that are also Eumont gas wells.

Q Now, I'm having some difficulty orienting this area as to the Eumont pool as a whole. Is this on the east flank of the pool?

A The best of my recollection, this is along the northeastern flank of the reservoir. However, I may stand to be corrected.

Q 22 South would be pretty far south of the pool, I think, Mr. Robinson. What do you expect to do in the event that the Eumont is still productive but fails to flow?

A At such time that the Eumont would fail to flow, if it would, however, we do not anticipate that to happen, but should it happen, I believe. probably at that time that the Penrose-Skelly will probably be depleted, and in that case we would put a plug in the Baker Model "D" and pump the Eumont oil up a single string of tubing.

Q It would appear from the initial potential on the Penrose-Skelly that that zone might not have too bright a future?

A Yes, that is correct.

Q At such time as it would become necessary to pump the Eumont, you could abandon the Penrose-Skelly?

A Yes.

Q It's impossible to artificially lift the Eumont through the 1 inch, is it not?

A Yes, sir, I believe it would be. It would be extremely difficult to find any type of rod that we could pump through the 1 inch.

Q Would it be possible to install any gas lift valves on that 1 inch tubing, or is there room in the 4 and 1/2 inch casing for that?

A No, sir, there's not room enough in this 4 and 1/2 inch casing. We're going to the limit at the present time in running the 2 and a 16th and 1 inch hydril. We have a clearance of around, I believe, two-tenths of an inch clearance in our casing to run these strings now.

Q Has the Eumont changed its producing characteristics in any respects since it has been completed and put on production?

A No, sir, not to my knowledge it hasn't. We haven't run any additional test. Of course, we will when we dually complete the well, but to my knowledge it has not at the present time.

Q How long has the Eumont been producing?

A Approximately fifteen to twenty days.

MR. NUTTER: Any further questions of Mr. Robinson? He may be excused.

(Witness excused)

MR. NUTTER: Do you have anything further, Mr. White?

MR. WHITE: No, sir, we have nothing further.

MR. NUTTER: Does anyone have anything further for Case 1991? We'll take the case under advisement and take a fifteen-minute recess.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, 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 machine shorthand and reduced to typewritten transcript 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 30th day of June, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission expires:

June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1991 heard by me on 6/22, 1960.

....., Examiner
New Mexico Oil Conservation Commission