

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Case No. 1210

TRANSCRIPT OF PROCEEDINGS

February 20, 1957

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
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MR. CAMPBELL: Mr. Examiner, I am Jack M. Campbell of Campbell and Russell, Roswell, New Mexico, appearing on behalf of the applicant, Neville G. Penrose, Case No. 1210. I have one witness to be sworn, Mr. McNaughle.

MR. NUTTER: Mr. Campbell, before proceeding into this case, Paragraph Two in the application states that applicant proposes to dually complete the above described well, producing Blinebry well, through the casing-annulus, and Tubb gas through the tubing. However, Exhibit B attached to the application indicates that the production would be otherwise. Do you care to make a comment on that statement?

MR. CAMPBELL: Mr. Examiner, I would like request to amend the application on Paragraph Two to reflect the same proposed completion as is indicated in the diagrammatic sketch attached to the application, which is to produce oil from Blinebry Oil Pool through the tubing by means of a cross-over assembly, and gas from the Tubb Gas Pool through the tubing to the producing zone of the Blinebry Oil Pool, and thence through the casing-tubing annulus to the surface.

MR. NUTTER: That amendment is satisfactory. Thank you.

(Witness sworn.)

JOHN P. McNAUGHLE

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY: MR. CAMPBELL:

Q Will you state your name, please?

A John P. McNaughle.

Q And by whom are you employed, Mr. McNaughle?

A Neville G. Penrose, Inc.

Q In what capacity?

A Vice president and engineer.

Q In your capacity as an engineer, professional capacity, have you testified previously before the New Mexico Oil Conservation Commission?

A Yes, sir.

Q Are you acquainted with the application of Neville G. Penrose, Inc., in case No. 1210, relating to proposed dual completing of your Hinton No. 10 Well?

A I am.

Q Will you state to the Examiner generally what you propose to do?

A Our Hinton No. 10 currently is producing through perforations opposite the Blinebry Oil Zone, and we propose to perforate the casing opposite the Tubb gas section and by means of a cross-over assembly, produce the Tubb gas through the tubing-casing annulus, and the Blinebry oil through the tubing.

MR. CAMPBELL: Will you please mark this as Exhibit No. 1, and this Exhibit No. 2?

(Penrose's Exhibits Nos. 1 and 2 marked for identification.)

Q Will you please, Mr. McNaughle, give for the record, some completion data and producing history on the Hinton No. 10 Well, please?

A The Hinton No. 10 was spudded on October 6, 1948 and was completed on November 28, 1948. It was drilled to the Drinkard section, and attempt was made at that time to complete the well in the Drinkard section, but this attempt was unsuccessful and the well was plugged back into the five and a half inch casing, which is set at 6327. Casing was then perforated opposite the Blinebry section as so noted on the exhibit, and the well was brought into production from that zone. Currently, the well is producing approximately six barrels of oil with a small fraction of a barrel of water per day. In 1956, there was a total of 2178 barrels of oil sold from this one well. The gas-oil ratio on recent test, was 16,831, and on that test, it calculated approximately one hundred and ten thousand cubic feet of gas per day from the Blinebry section. The gravity of the oil is thirty-eight degrees, this Blinebry oil is thirty-eight degrees. The total depth of the well is 6555.

Q I hand you what has been marked as Penrose's Exhibit No. 1 in this case, and ask you to state what this is?

A This is a diagrammatic sketch indicating the present

status of the well after the dual completion equipment had been installed.

Q Will you state generally and briefly what that diagrammatic sketch indicates and what you propose to do?

A This indicates that we plan to set production packers at approximately forty-five hundred, and fifty-seven fifty, a tubing extending through both packers, and with a cross-over assembly which probably will include a two-zone flow tube, as indicated in the sketch in the upper packer. This will allow oil to be produced from the Blinebry section through this two-zone flow tube and a cross-over choke assembly into the tubing, and thence through the tubing, to the surface. It also shows that the Tubb gas will be produced through the tubing up through the cross-over assembly at approximately fifty-four hundred, and from thence into the tubing-casing annulus and into the surface.

Q I hand you what has been identified as Penrose's Exhibit No. 2 and ask you, for the purpose of identification, to state what that is?

A This is a proposed procedure in the completion attempt for dual completion.

Q That is the procedure you have outlined, is that correct?

A That's correct.

MR. CAMPBELL: I would like to offer Exhibits Nos. 1 and

and 2 into evidence in this case.

MR. NUTTER: Without objection, these exhibits will be received.

Q Mr. McNaughle, in your opinion, if this application is approved, and the procedures which you contemplated are used, do you believe that this dual completion can be made and produced without waste?

A Yes, sir.

Q You believe that the two separate zones of Blinebry oil zone, and the Tubb gas will be completely separated?

A Yes, sir.

MR. CAMPBELL: That's all.

MR. NUTTER: Does anyone have any questions of the witness?

MR. MANKIN: Yes, I do.

MR. NUTTER: Mr. Mankin.

CROSS EXAMINATION

BY: MR. MANKIN:

Q Mr. McNaughle, have you performed any kind of test on the Tubb to determine its flowing characteristics or the amount of liquids produced?

A No, sir.

Q Has it been -- How do you know that it will produce, then?

A We anticipate that it will produce from the Tubb section inasmuch as the northeast offset to this well is currently producing

from the Tubb section. Our Hinton No. 3 located in the SE/4 of the SW/4 of Section 12, 22, 37, is currently producing as a dual gas well, producing from the Blinebry and the Tubb gas sections, and on the recommendation of the geologist, who worked for us, we feel that we can produce a commercial well from the Tubb section.

Q The reason I am asking that question is because you propose to move this gas through the casing -- I mean through the tubing, apparently to the -- approximately to the Blinebry, and thence to the casing-tubing annulus, is that correct?

A That's correct.

Q My question is, if it is producing any quantities of liquid, do you feel that you will get proper flow after it reaches the annulus flow, do you have any knowledge of it?

A The amount of the liquid?

Q Amount of liquid that will have to be lifted with this gas.

A Our Hinton No. 3 produces approximately ten barrels of liquid per million cubic feet of gas, and I am hopeful that we can produce as much, or more than that from this well.

Q Do you feel that in this neighborhood of ten barrels per million, that you will be able to properly lift the liquid in the annulus flow from the Blinebry to the surface?

A I think we can produce it, yes, sir. I don't think that it will be as efficient as it would be if we could produce the Tubb

gas through the tubing, but we made an attempt to do that last August, and the Commission denied our request, and that is the reason we are requesting this cross-over packer.

Q You mentioned some other wells in the area, one which you had in Section 12, which was a gas-oil dual from the Blinebry.

A No, it is gas-gas.

Q I mean gas-gas. Was that producing around ten barrels per million, that particular well?

A Approximately that amount.

Q From the Tubb?

A From the Tubb, and also from the Blinebry.

Q What kind of completion is that gas well, is it tubing-tubing, or --

A Tubing-casing annulus.

Q But the Tubb gas is being produced through the tubing?

A Yes, sir, that's correct, and the Blinebry is being produced from the tubing-casing annulus.

Q In that particular well, how much liquid is being produced from the Blinebry? Roughly?

A Roughly, twenty to forty barrels per day, depending upon the amount of gas that is being taken. That is, from both of the zones together, the liquid is co-mingled.

Q You don't have any knowledge of separate production of the

Blinebry in that particular well?

A We have some tests on those wells, but, of course, they are not under consideration here and I didn't bring that information with me, but for my own purpose in calculating reserves, and so forth, I usually use ten barrels per million, and that comes out pretty close to being correct. Actually, I think there is a little more liquid being produced from the Blinebry than there is from the Tubb.

Q So if there is less liquid being produced from the Tubb, you don't feel that you have any problem of the well plugging up from the portion of the flow?

A I can't anticipate what problems we are going to have. I do know that in some of these wells, noticeably our No. 3 Well, we have had some difficulty with water production, logging up the well, in which case, it has been necessary for us to reverse the flow and remove the liquid through the tubes, and then segregate the zones again. That is a production problem that we will have to be faced with again if it occurs.

Q In the Tubb and the Blinebry Formations, what facilities do you have available for taking bottom hole pressure in this particular well in question?

A We will be able to take bottom hole pressure by reversing the flow through the two-zone control equipment that we will have in the well. In other words, by pulling the -- If we use an Odos

choke, we will be able to pull the Odos choke and run a black mandrel and produce the Tubb through the tubing to take the bottom hole pressure. The equipment I have in mind wouldn't allow us to run a bottom hole pressure through the tubing down there, but it can be calculated from fifty-four hundred down to the zone that it will be producing from.

Q In other words, it is not a full opening such that you can take one?

A We haven't purchased the equipment yet, and probably we will use that type of equipment, but the equipment that I have shown on the diagram would not permit that, that is correct.

Q So that you could **reverse** taking the Tubb bottom hole pressure, but you would have to convert it if you didn't reverse the flow for the Tubb?

A Well, the zone, the equipment will be installed in order that we can produce either zone through the tubing, and we plan to treat both zones as indicated on Exhibit No. 2 during this completion attempt. In other words, we will perforate the Tubb section and we plan to attempt to rejuvenate the Blinebry oil section by treating it at the same time to increase production there. The Blinebry well in the SW/4 NW/4 of 13 is producing almost twice as much oil according to our last report, and we hope to increase our production accordingly.

MR. MANKIN: That's all.

BY: MR. NUTTER:

Q Mr. McNaughle, when that five and a half inch pipe was set at 6372 feet, how many sacks were used in cementing it?

A 352 sacks of cement.

Q How far up the casing annulus did that cement come?

A We don't have the temperature survey, and I haven't calculated how far it would come. However, you will note on Exhibit No. 2, that we intend to run a dowell spinner survey in an attempt to check any possible chocking leaks, and also to test the bottom hole pressure in the casing, and also if there is any indication that the casing is in bad condition, it most certainly will be repaired before the completion attempt is finished.

Q Running the dowell spinner survey would not necessarily give any indication of any communication on the outside of the casing between the two zones, however, would it?

A No, sir, not necessarily. The proposal is that we run that dowell spinner survey before the tubing is perforated. I think probably I got away from the question you asked me. We have no way of knowing exactly how the casing has come behind the five and a half inch casing, except by calculation, and without calculating it, I feel sure that the 350 sacks has completely covered the Blinbry section, or else we would have had some indication of it before now,

and the Tubb section is below that section, so all we can do is assume that the casing is adequate and cemented around the Tubb section. However, if in this completion we do find that there is an indication of a bad cement job, well, we will just have to take that problem as it comes to us.

Q If there is an indication that the cement job between the Blinebry and Tubb Formations is not adequate, it can be perforated and squeezed, cemented?

A That is correct. In the process of completion, it will be necessary for us to take packer leakage test, and in some way prove that the zones are separated, and we, of course, will do that. I believe that's a requirement of the Commission in all dual completions.

MR. NUTTER: I think that is all. Does anyone else have a question of the witness?

MR. UTZ: Yes, sir, I have one.

MR. NUTTER: Mr. Utz.

BY: MR. UTZ:

Q Mr. McNaughle, maybe you stated this and I didn't catch it if you did. What size tube is the well being completed in?

A Two inches.

Q Two inches?

A Yes, sir.

Q The cross-sectional area of the tubing-casing annulus

is much greater than the cross-sectional area of the two inch tubing, is that right?

A That is correct, sir.

Q Therefore, your Tubbs Formation producing through the annulus will have to produce at a much higher rate in order to maintain enough velocity, will it not, if it were -- than it would with a two inch tube?

A Yes, sir.

Q With five inch casing you couldn't run two strings of casing, could you?

A We could, but it would complicate the situation materially. As I stated a moment ago, we had previously requested permission to produce the zone parallel, in other words, let the Blinebry section produce through the tubing-casing annulus because of the fact that we didn't feel that there would be waste, and because of the small amount of oil being produced from the Blinebry section. Now, we feel it is necessary to keep down the cost where ever possible, and I believe that the cost of running two strings would almost be prohibitive, and probably would preclude our completing this job as indicated. We feel that this is a second-best way to do it, and we were denied the first way, the best way we thought we could do it.

Q A gas line plugged up with drilling mud does not produce much gas, does it?

A That's correct, sir, and that's the reason for having

