BEFORE THE
OIL CONSERVATION COMMISSION
Hobbs, New Mexico
May 23, 1956

IN THE MATTER OF:

CASE NO. 1076

TRANSCRIPT OF PROCEEDINGS

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| The application of El Paso Natural Gas Company for an order approving a dual completion in the Blanco Mesaverde Gas Pool and North Los Pinos Dakota Gas Pool in compliance with Rule 112 (a) of the New Mexico Oil Conservation Commission Statewide Rules and Regulations. | |
| Applicant, in the above-styled cause, seeks an order granting them permission to dually complete by the use of a double crossover flow tube on their Allison Unit Well No. 10 in the Blanco Mesaverde Gas Pool and the North Los Pinos Dakota Gas Pool; said well being located 1750 feet from the North line and 990 feet from the West line of Section 20, Township 32 North, Range 6 West, San Juan County, New Mexico. | CASE NO. 1076 |

PROCEEDINGS

BEFORE:

Warren W. Mankin, Examiner

EXAMINER MANKIN: The next case on the docket is Case 1076, the application of El Paso Natural Gas Company for an order approving a dual completion in the Blanco Mesaverde Gas Pool in the North Los Pinos Dakota Gas Pool in compliance with Rule 112 (a) and also for the approval of a non-standard location in the Blanco Mesaverde Pool for subject well.

MR. WOODWARD: I am John Woodward representing El Paso Natural Gas Company. El Paso's first witness will be John Edward Coel. I would like him to be sworn, please.

MR. MANKIN: Do you have more than one witness?

MR. WOODWARD: We may.

MR. MANKIN: We will swear both witnesses at the same time.

JOHN EDWARD COEL

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

by Mr. Woodward:

Q. Mr. Cole, please state your full name.

A. Edward John Coel.

Q. Where do you live?

A. Farmington, New Mexico.

Q. For whom do you work and in what capacity?

A. El Paso Natural Gas Company as Senior Petroleum Engineer.

Q. Have you previously testified before this Commission as Petroleum Engineer and as an expert witness?

A. I have.

Q. Are Mr. Coel's qualifications acceptable?

MR. MANKIN: They are.

Q. Mr. Coel, are you familiar with El Paso's application in Case No. 1076?

A. I am.

Q. Will you state briefly the nature and purpose of that application?

A. The purpose of the application is to ask for a dual completion in the North Los Pinos Dakota and the Mesaverde Blanco Pool with the use of a crossover sub between the packers to allow production from the lower Dakota through the annulus and the upper Mesaverde through the tubing and also to get a non-standard location in the Mesaverde Blanco Pool.

Q. I hand you now what has been marked El Paso's Exhibit A. Are you familiar with this Exhibit?

A. I am.

Q. Was it prepared under your direction and control?

A. Yes, sir.

Q. Will you state what it shows, please?

A. It is a plat showing Sections 17, 18, 19 and 20 of Township 32 North, Range 6 West, San Juan County, New Mexico. It shows the offset acreage of this well, the offsetting wells in that acreage and it also shows the interest owners of the acreage.

Q. It shows the location of the Allison Unit Well No. 10?

A. That is correct, sir.

Q. Will you briefly outline the drilling completion history of the Allison Unit Well No. 10?

A. Yes, sir, this well was spudded on the 20th of January, 1956 as a proposed test in the Dakota formation. Drilling was completed on the 3rd. of March, 1956 and final completion effected the 21st. of March, 1956. The total

depth of 8,255 feet was reached and plugged back to 8,042 feet in the Dakota formation. The casing was originally set at 13 3/8 at 169 feet with 125 sacks of cement, 9 5/8 at 3,553 feet with 250 sacks of cement and 5 1/2 at 7,940 feet with 500 sacks of cement. An attempt was made to frac the Dakota formation at the interval of 7,940 and plug back total depth of 8,042 feet. Two attempts were made and neither was successful. At that time we felt that the Dakota formation was not commercially productive and sought to produce the Mesaverde formation. We perforated at an interval of 5,500 to 5,690, 5,730 and 5,788, both intervals being fraced and found commercial production. We then attempted to dually complete this well by setting two packers, Baker Model "D" production packers, one at 5,475 above the Mesaverde and one at 5,813 below the Mesaverde. We then ran 2 inch tubing through these packers with a Baker Model "D" crossover flow tube set in the upper packer to allow production of the Dakota formation through the annulus above the Mesaverde and Mesaverde production through the tubing.

Q. You stated the well did not discover production in the Dakota formation in commercial quantities; are you therefore proposing the Commission approve a dual completion in the Dakota and Mesaverde formation?

A. That is true.

Q. What did the Dakota formation test?

A. 368 MCF per day.

Q. Which has a monetary value of what?

A. Probably about $12.50 a day in production.

Q. Will such production pay for the cost of drilling and operating the well?

A. No, sir.

Q. What did the Mesaverde formation test?

A. 6,551,000 MCF per day, having a commercial value of somewhere between $125.00 and $175.00 a day.

Q. Considering the production from both of these formations, will the well pay for its cost of drilling and operating?

A. We hope that the Mesaverde will make that cost up.

Q. I hand you what has been marked as El Paso's Exhibit B. Are you familiar with this Exhibit?

A. Yes, sir.

Q. Was it prepared under your direction or supervision?

A. It was.

Q. Will you explain what that Exhibit shows?

A. This is a schematic diagram of the dual completion of the Allison Unit No. 10, showing the casing depths, the packer setting depths, the producing intervals, the total depth and the plug back depth.

Q. Will you explain why you recommend this type of dual completion for the Allison Unit Well No. 10?

A. Yes, sir, we feel that the Dakota formation, while it will not alone produce commercial quantities of gas, will help to pay the overall high cost of this deep test and we are more interested in protecting our commercial gas zone to Mesaverde; therefore we have employed the use of dual packers and a crossover sub so that we can make every attempt to keep the Mesaverde formation clean from any of the liquid accumulations.

Q. Why is it important to keep the Mesaverde formation clean?

A. Past experiences have shown that most Mesaverde wells will produce better through tubing because they will, in future life, produce some water or distillate in quantities.

Q. What effect will this production of distillate, water or other fluids have upon the recovery of gas in the formation?

A. It will delay the recovery of gas due to----unless you are able to lift that out of the well-bore it will gather in the well-bore, and keep the constant gas flow down.

Q. Is it your testimony that you can better keep this formation clean through a tubing completion?

A. Yes, sir.

Q. The Mesaverde production then is your principal towards the production for this well?

A. That is true.

Q. In the Dakota $12.00 a day is a salvage proposition?

A. That is true. We might go on there that in regard to this type of dual completion we feel that we are more interested definitely in our commercial gas zone, than we are in the non-commercial gas zone. It is just a matter of salvage.

Q. Has this type of dual completion been used previously in the State?

A. Not to my knowledge.

Q. Why is that?

A. The State objects or rather the Oil Conservation Commission objects to the use of this type of dual completion because it does not allow bottom hole pressure surveys to be run, especially on the lower formation. An approximate survey could be made of the Mesaverde formation but none of the Dakota.

Q. Are bottom hole pressure tests required in the Dakota formation in the Northwest at this time?

A. No, sir, they are not.

Q. There is a possibility that in some future date the Commission may wish to take such tests?

A. That is true.

Q. And with this type of dual completion you could not take a bottom hole pressure test?

A. That is also true.

Q. Could you accurately compute bottom hole pressures in the Dakota formation at the mouth of the well under the dual completion setup you are recommending?

A. We feel that we can. The Dakota formation, to our knowledge, and past experiences , has proved to be a very dry gas formation, without accumulations of liquids in it. We feel that we could calculate bottom hole pressures on it.

Q. Now you have previously testified that there is a risk of prejudice to the Mesaverde formation through a completion in the annulus, is that correct?

A. That is true.

Q. But that the type of dual completion that you are recommending whereby the Mesaverde formation is produced through the tubing would not permit a bottom hole pressure test in the Dakota?

A. That is true.

Q. What is your opinion as to the justification of protecting the Mesaverde formation from waste in the ground as compared with the desireability of conducting such pressure tests in the future?

A. We feel the economic factors of being able to produce the Mesaverde formation far outweighs the value of the bottom hole pressure survey of the Dakota formation.

Q. In this particular well?

A. In this well, yes.

Q. Have you tested this type of completion to determine whether there is any commingling between the two producing zones?

A. Yes, sir, we have.

Q. What was the result of such tests?

A. A packer leakage test was run yesterday under the supervision of a member of the Oil Conservation Commission of Aztec, New Mexico. After 47 days the casing pressure for the Dakota formation had a wellhead pressure of 2,454 pounds, /representing the Mesaverde formation. the tubing pressure was 1200 pounds The tubing was opened and flowed for one hour's time through a 3/4 inch choke. The pressure was drawn down behind the choke to 404 pounds while the pressure of the casing was measured at 2,516. The tubing was then shut off and the casing was opened

to allow flow for one hour. At the end of that hour's time the tubing pressure had built up to 1,149 pounds while drawing the casing pressure down to 39 pounds. We feel that this is a valid test and shows that there is no commingling of gas due to packer leakage or a leak in the tubing.

Q. What provision do you propose, Mr. Coel, for separately measuring production in the Mesaverde and the Dakota formations?

A. We will set separate meter runs on the two types of production. One meter run will measure the gas from the tubing and the other from the casing.

Q. Directing your attention again to Exhibit A, what area shown thereon is the Allison Unit?

A. All the area, except the E/2 of Section 20 which is not committed to the unit.

Q. Are you familiar with the well location requirements of Order R-110 and the mandate covering the Mesaverde formation?

A. I am.

Q. Can you state those requirements?

A. They require that a well be located in either the NE/4 or the SW/4 of the section.

Q. And where is the Allison-------exactly where is the Allison Unit Well located?

A. 1750 feet from the North line and 990 feet from the West line of Section 20 being in the NW/4.

Q. Which is an unorthodox location for a Mesaverde well?

A. That is true.

Q. In your opinion, as an engineer, will a dual completion of the Allison Unit well in the manner that you recommended protect correlative rights for all offset owners?

A. It will.

Q. Will such completion prevent the waste of non-commercial quantities of Dakota gas in the ground, the economic waste which would result in the drilling of additional Mesaverde wells in an orthodox location?

A. Yes, sir.

MR. WOODWARD: I have no further questions of the witness under direct examination. I submit Exhibits A and B.

MR. MANKIN: I don't believe they have been so marked as yet. Do you want them marked as you have indicated, as Exhibit A and Exhibit B. Is there objection to the entering of Exhibit A and Exhibit B in this case? If not, they will be so entered. Mr. Coel, has there been any other dual completions granted in the Northwest in which the Mesaverde is produced through or rather where it would be produced through the annulus?

A. Not to my knowledge.

MR. MANKIN: In other words, you likewise are not--do not desire that in this case. You desire to produce it through the tubing and you know of none other where it has been produced through the annulus?

A. No, sir.

MR. MANKIN: Let the record show that although the docket of this particular case indicates that this is only for a dual completion of this well, in compliance with Rule 112 (a), that the readvertised case on May 10th, also

in addition to the request for dual completion likewise requested and so properly advertised for the non-standard location as exception to Rule 110 (a) as amended. Is there question of the witness in this case? Mr. Utz.

MR. UTZ: Mr. Coel, you went through the packer leakage test rather fast. I wonder if you would run through that again so that we will understand it?

A. I will be glad to.

MR. UTZ: Also state what the differential across the packer was.

A. Well, that will take a little calculations on the packer. I have not done that. I might go back here and reflect that the original potential test taken on the well after 15 days of shut-in showed a casing pressure of 2,318 and a tubing pressure of 1,154. After 47 days of shut-in pressure, the casing pressure was 2,454 pounds and the tubing 1,200 pounds. The tubing was opened, the pressure was taken every 15 minutes. At the end of an hour's time the casing pressure had built up to 2,516 while drawing the tubing pressure down to 404 pounds. This was through a 3/4 inch choke in the tubing. It was then shut-in and the 3/4 inch choke was transferred to the casing and the casing was flown for an hour's time.

MR. UTZ: How long was that shut-in?

A. About 10 minutes. At the end of an hour's time, the tubing pressure was 1,149 pounds while the casing pressure had been drawn down to 31 pounds.

MR. WOODWARD: Mr. Coel, how long will it take you to make the computation of the pressure differential across the packer?

A. About twenty minutes.

MR. WOODWARD: If the Commission desires the information on the pressure differential across the packer we will be glad to submit such calculation.

MR. UTZ: Your flowing tubing pressure on the Mesaverde was 404 pounds?

A. Yes, sir, at the end of an hour's time.

MR. UTZ: And your shut-in pressure was 2,516 on the Dakota?

A. That is true.

MR. UTZ: That would be the approximate differential across the packer?

A. Yes, that is right.

MR. MANKIN: Mr. Utz, before we proceed to go ahead with the counsels request here, it will not be necessary at this time to make that calculation. I presume, however, that the packer leakage test which is now available, will be properly submitted?

A. It will be.

MR. MANKIN: That information will, of course, be on that particular packer leakage test. Proceed please.

MR. UTZ: If you had flowed the high pressure side of the Dakota, do you think you would of gotten that much differential across the packer?

A. No, because the Dakota blew down, in an hour's time, to only 31 pounds flowing pressure and it would be almost impossible for the Mesaverde to get much higher than 1,200 pounds.

MR. UTZ: Mr. Coel, is there any better type of dual completion that you could have made here and which would have kept the liquids off of the Mesaverde?

A. Yes, sir, there is. We could not have made it here because we were in a little bit of a bind on getting this done. A dual string of tubing might have been run. It would be rather difficult to get inside a 5 1/2 inch casing, but it has been done.

MR. UTZ: If you had planned before hand you could have used a dual string?

A. If we would have had the equipment available, that is true, we could have done it.

MR. UTZ: Would you say in this case that the use of a Rector head with a bleeder string would be satisfactory or not?

A. It could be, yes. I don't say it would be exactly but I am sure that it could be worked out.

MR. MANKIN: Mr. Utz, what you had in mind was, of course, for the Mesaverde.

MR. UTZ: That is correct. The Dakota formation in this pool will be subject to the deliverability test under Order R-333, isn't that correct?

A. That is true.

MR. UTZ: Do you anticipate any complication in calculating the working pressure-------pressure loss due to friction on this type of completion?

A. No, sir, we will have two different factors to take in there, but I believe they can be easily done.

MR. UTZ: They can be calculated through the crossover?

A. I think they can.

MR. UTZ: You don't believe there will be any restrictions in the crossover?

A. No, it is nearly full opening. The restriction is negligible, it is for a very short sub actually.

MR. UTZ: In case of dual completion it will be necessary in order to make that calculation on everything, is that correct?

A. Of this type, yes.

MR. UTZ: I believe that is all I have.

MR. MANKIN: Any further questions of the witness in this case? If there is no other questions of the witness--------you don't desire to put on your other witness, do you? The witness may be excused. Before you make your statement, Mr. Woodward, let the record show that El Paso requested this application to be approved administratively; however the Commission and also this particular application was in two designated pools which likewise anomalous for the Northwest because most of the dual completions that had been granted administratively were outside of these designated pools, but the Commission felt that this being the only type of this completion that had ever been requested within the State, that it best be brought to the attention of everyone and that it best be served by a hearing and also could bring out that particular facet of it that the bottom hole pressure could not properly be taken of the lower zone. Mr. Woodward.

MR. WOODWARD: The applicant in this case would like to make clear that it is not recommending this type of dual completion as a precedent for the Northwest, but that in the exercise of his business judgement that it is faced with this particular problem; it has a very small amount of Dakota formation which he would like to salvage, rather produce than leave it in the ground, but not at the risk of prejudice to the only commercial formation in the well. The prospective risk of waste in the Mesaverde far outweighs the value of conducting a pressure test at some future date on the chance that it should be required. The deliverability of the Dakota formation is lower than might be expected in other Dakota wells and so far as Dakota production is concerned may well be classified as marginal. For this reason, we urge the Commission to make an exception in this particular case.

MR. MANKIN: Is there further statements to be made in this case? If not, we will take the case under advisement.

STATE OF NEW MEXICO )
: ss
COUNTY OF SANTA FE )

I, Joan Hadley, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Commission Examiner at Hobbs, New Mexico, is a true and correct record, to the best of my knowledge, skill and ability.

Dated at Santa Fe, New Mexico this 26th day of September, 1956.

Joan Hadley