BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 11, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Southwest Production Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its Davis Federal Well No. 1, located in Unit L of Section 24, Township 26 North, Range 11 West, San Juan County, New Mexico, as a dual completion with production of oil from the Gallup zone and production of gas from the Dakota zone to be through parallel strings of 1 1/2-inch tubing.) CASE 2664

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We call 2664.

MR. DURRETT: Application of Southwest Production Company for a dual completion, San Juan County, New Mexico.

MR. NUTTER: Is there anyone here from Southwest Production Company? The case will be continued to October 24.

The hearing is adjourned.

(Whereupon, the hearing was adjourned.)

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

WITNESS my Hand and Notarial Seal this 12th day of October, 1962, 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. 2664, heard by me on Oct 11, 1962.

..., Examiner
New Mexico Oil Conservation Commission

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 24, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Southwest Production Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its Davis Federal Well No. 1, located in Unit L of Section 24, Township 26 North, Range 11 West, San Juan County, New Mexico, as a dual completion with production of oil from the Gallup zone and production of gas from the Dakota zone to be through parallel strings of 1 1/2-inch tubing. CASE 2664

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 2664.

MR. DURRETT: Application of Southwest Production Company for a dual completion, San Juan County, New Mexico.

MR. COOLEY: William J. Cooley, law firm of Verity, Burr and Cooley, Farmington, New Mexico, appearing on behalf of the applicant. We have one witness, Mr. Leon Wiederkehr.

(Witness sworn.)

V. L. Wiederkehr

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

DIRECT EXAMINATION

BY MR. COOLEY:

Q Will the witness state his name, please?

A V. L. Wiederkehr.

Q Where do you reside, Mr. Wiederkehr?

A In Farmington.

Q By whom are you employed?

A By Southwest Production Company.

Q In what capacity?

A Assistant Superintendent.

Q Have you previously testified before the Oil Conservation of New Mexico as an expert witness?

A Yes, I have.

MR. COOLEY: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir.

Q (By Mr. Cooley) Are you familiar with the well which is the subject of the present application?

A Yes, I am.

Q What is the name of that well?

A The Davis Federal No. 1.

Q Where is it located?

A Section 24, 26 North, 11 West.

Q In what quarter section?

A It would be the Northwest of the Southwest.

Q Have you prepared a plat which reflects the location of this well and surrounding wells?

A Yes, I have.

(Whereupon, Applicant's Exhibit No. 1 was marked for identification.)

Q I hand you what has been marked as Applicant's Exhibit No. 1 and ask you if this is the plat to which you refer?

A Yes, it is.

Q Would you briefly explain what is shown there?

A All the adjoining wells and adjoining leaseholders are shown on this plat, along with Dakota wells and dual Dakota-Gallup wells.

Q With respect to this plat, where is the subject well located?

A It's in the center of the plat, Section 24. It's identified as a dual, as the Davis No. 1.

Q What two pools do you propose to dually complete this well in?

A The Basin-Dakota and Gallegos-Gallup.

Q Is the Basin-Dakota a gas pool?

A Yes.

Q And the Gallegos-Gallup an oil pool?

A Generally considered an oil pool; although some wells are classed as gas wells, they are high ratio.

Q What are the producing characteristics of the two zones encountered in the subject well?

A Normal Dakota, the Gallup is probably more fractured shale than sand. Each zone requires stimulation by fracture

treatment.

Q Have you run a test on the Gallup zone which would indicate its producing ability?

A We have run some tests against approximately 400-pound back pressure to approach a line pressure that we might expect to produce gas into. We have not recovered the frac oil from the Gallup zone. The well is making a little over four barrels per day with about 200 MCF gas per day against 400-pound back pressure.

MR. UTZ: 200 MCF gas?

A Four barrels of gas. We have not recovered the load oil.

Q (By Mr. Cooley) Would you consider the Gallup zone in this well a marginal completion from an economic standpoint?

A Very marginal.

Q Have you prepared a diagramatic sketch which reveals the manner in which you propose to dually complete the subject well?

A I have.

(Whereupon, Applicant's Exhibit No. 2 marked for identification.)

Q I hand you what has been marked as Exhibit No. 2 and ask you to explain this exhibit.

A It's a diagramatic sketch of this proposed dual completion, showing the Dakota perforation, the Baker Model "D" Packer, the Gallup perforation and the two tubing strings.

Q What size casing do you have in this hole?

A 5-1/2, 15-1/2 pound casing.

Q What size tubing do you propose to use?

A 1-1/2 non-upset in both strings.

Q With respect to the Gallup zone, what effect if any do you believe that the smaller than authorized size of tubing will have upon the producing efficiency of this zone?

A Considering the low productivity of the well, I think with the smaller tubing that liquids would be carried out better, produced better through the smaller tubing than they would through larger tubing.

Q Do you anticipate any paraffine problem in this zone?

A We do not anticipate paraffine problems.

Q Are you equipped to cope with it if you do have it?

A If we do encounter paraffine problems, we would propose to change to a larger tubing size. It would not be necessary to disturb the Dakota tubing string. We could merely kill the Gallup with oil, pull the inch and a half and run a larger tubing string, 2-1/16 inch tubing string.

Q Has this well actually been dually completed in the fashion shown on this exhibit?

A It has been completed up to the point of potential test, packer leakage tests have been run.

Q What do they reveal?

A They show that the packer was holding and the zones are isolated. I might add that these tests have not been filed with

the Commission. They were just recently completed and probably have not been filed at this time.

Q In your opinion, could the approval of this application in any way result in waste?

A No. I certainly think it should not.

Q How is this hole cemented?

A An 8-3/4 hole was drilled to 5165, which is some, oh, 30 feet above the top of the Gallup. The hole was then reduced to 7-7/8ths, drilled to 7-7/8th to T.D. of 6339. It was cemented with 225 sacks of cement, giving a calculated slurry of some 412 cubic feet. The calculated fill-up from hole size would have required only some 216 cubic feet to fill all this 7-7/8ths hole, so we actually have about twice as much volume of cement as would have been required to have filled to the top of the Gallup.

Q In completing this well, did you have any indications that there was an adequate cement behind the pipe and across the Gallup zone?

A During the cementing operations, we rotate the pipe until the plug is down. We had good circulation throughout the cement job, and then during the completion job, during the frac job on the Gallup zone, as with all, sealers were dropped. At one time we dropped ten balls and had 500-pound pressure increase which would certainly indicate the perforations were sealed by a good cement job. The 10-ball sealers going into 50 holes would not have increased the pressure like that if we did not have the

holes isolated by cement.

Q Do you have anything further you wish to present in this case?

A No.

MR. COOLEY: That completes the applicant's case.

MR. UTZ: Do you want to enter your exhibits?

MR. COOLEY: Yes. At this time we would like to formally introduce Applicant's Exhibits 1 and 2.

MR. UTZ: Without objection, the Applicant's Exhibits will be entered into this case.

(Whereupon, Applicant's Exhibits Nos. 1 and 2 admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q You mentioned 5165 with what size hole?

A 8-3/4ths down to 5165. Then 7-7/8ths to T.D. of 6339. Now the top of the Gallup is 5195, so the Gallup, all of the Gallup then was drilled with this 7-7/8ths hole.

Q How many sacks of cement did you use?

A 225.

Q What was your calculated top?

A Rather than calculate the top, I calculate the amount of cement required to get to some particular depth, to cover some particular zone, and had an excess then to take care of washout, but to cover from bottom to the top of this 7-7/8ths hole, assuming an

8-inch hole size, it would have required only 216 cubic feet of slurry. We ran some 412 cubic feet of slurry, which is almost twice as much as would be required to fill that hole if it were bit size. . We allowed this extra volume for washout and possible lost circulation during cement operations, which didn't occur.

Q In your opinion, is the cement as much as 100 feet above the Gallup zone?

A Very definitely. Calculating fill-up, assuming bit size all the way, the cement would have been, oh, I figured it back up around 4500 feet, roughly. I don't recall exactly where it was but we have almost twice as much cement as would be required if we assumed that the hole stayed at bit size. We have allowed then 190 some cubic feet excess.

Q So from the top of this cement at some point above the Gallup zone to the surface, there is no cement behind the pipe?

A That is correct.

Q What producing zones do you have in this area?

A The Gallup and the Dakota.

Q There's nothing from the top of the Gallup to the surface?

A That is correct. The Pictured Cliff-North Mesaverde is productive in this area, and stage cementing is not required by the Commission.

Q This is kind of a fringe area for Pictured Cliffs?

A It's beyond the limits of the Pictured Cliff production.

Q Now the surface casing was 10-3/4. Was that 150 sacks sufficient to circulate?

A Yes, sir, 150 sacks of cement circulates; we circulated cement on all the wells with surface set at around 200 feet.

Q Mr. Wiederkehr, what is the setting depth of your inch and a half tubing in the Gallup string?

A It is shown on the sketch set at 5461, which is in the Gallup perforations.

Q What's the difference in cost between 2-1/16ths and 1-1/2 inch tubing?

A I'm sorry, I'm not prepared to say the difference in the cost. The reason for running this inch and a half was, of course, economic reasons. I can't say what the dollar difference would have been.

Q Don't you have any idea what tubing costs per foot?

A I would guess that an inch and a half would probably cost two-thirds of what the 2-1/16th would cost, or less.

Q Actually, you are not sure whether this well is even going to produce from the Gallup yet or not?

A Well, we have tested it through a separator. We have not recovered all of our load oil. It is producing against a 400 pound back pressure, which is what we would expect to produce it against. It's not connected to lines yet.

Q Four barrels of oil a day and 200 MCF of gas would be a GOR of 50,000 to 1, is that correct?

A Well, I didn't calculate the GOR, but I didn't think it was that high.

Q The production figure you gave was four barrels of oil per day?

A Yes.

Q 200 MCF of gas. That would be 200,000. 4 into 200,000 is 50.

A That is our production test on the well. I hadn't checked the GOR. By not having recovered our frac oil, we are not calling this a potential test. At the present time, the well is shut in waiting on pipeline connections rather than continue to produce it and waste the gas.

Q Do GOR's have a tendency to go higher in this area, or lower?

A Higher. Most of the wells in the area produce about four barrels of oil per day. We expect that it's probably stable at this point and we'll find no appreciable decrease when we have finally recovered our frac oil.

Q In your opinion, will it sometime in the future be necessary to use artificial lift on this well in the Gallup zone?

A I think not, from the volume of liquids we're producing I think that we should not anticipate artificial lift. It may occur at some time, but presently it wouldn't appear that an

artificial lift would be necessary.

Q If it were necessary, could you use artificial lift through inch and a half?

A No, we wouldn't propose artificial lift through an inch and a half. We would propose to go through the 2-1/16th.

Q Kill the well with oil?

A Kill the well with oil, yes, sir, the well may be killed with oil. I loaded the hole with oil and killed it before I ran my Gallup string, so I know it can be killed with oil.

MR. UTZ: Are there any other questions of the witness? The witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case? We will take the case under advisement.

* * * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing was reported by me in stenotype, and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 19th day of November, 1962, 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. 2664, heard by me on 10-24, 1962.

Elvis A. Utz, Examiner
New Mexico Oil Conservation Commission