BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JUNE 7, 1961

EXAMINER HEARING

IN THE MATTER OF:

CASE 2302 Application of Atlantic Refining Company for an oil-oil-oil triple completion, Lea County, New Mexico.

TRANSCRIPT OF HEARING

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IN THE MATTER OF:

CASE 2302 Application of Atlantic Refining Company for an oil-oil-oil triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order authorizing the triple completion of its Carlson Federal "A" Well No. 1, located in Unit I, Section 23, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Paddock formation adjacent to the Justis-Paddock Pool, the production of oil from the Justis-Blinebry Pool and the production of oil from the Justis Tubb-Drinkard Pool, through parallel strings of 2-inch tubing.

BEFORE:

Daniel S. Nutter, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: We will call next Case 2302.

MR. MORRIS: Case 2302. Application of Atlantic Refining Company for an oil-oil-oil triple completion, Lea County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hervey, Dow & Hinkle, Roswell, appearing on behalf of the Atlantic Refining Company in Case

2302. We have one witness, Mr. Harold Frost, Jr.

(Witness sworn)

HAROLD FROST, JR.,

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 Harold Frost, Jr.

Q By whom are you employed, Mr. Frost?

A I am employed by the Atlantic Refining Company.

Q In what capacity?

A As a production engineer.

Q Have you previously testified before the New Mexico Oil Conservation Commission?

A I have.

MR. HINKLE: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, sir. Please proceed.

Q Are you familiar with the application which has been filed by the Atlantic for a triple completion in connection with the Atlantic Carlson Federal "A" Well No. 1?

A I am.

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

Q Mr. Frost, I hand you Atlantic's Exhibit No. 1, and ask

you to explain what it is, and what it shows.

A This plat shows a portion of the Justis Field. Encircled in red is the location of our Carlson Federal "A" No. 1, located in the northeast of the southeast, Section 23, Township 25 South, Range 37 East.

Q Does it also show the ownership of the surrounding leases?

A Yes, sir.

Q Do you know whether or not copies of the application in this case were mailed or sent to all of the offset operators?

A Yes, sir, they were.

Q Have you had any objection from any of the operators who were sent notices?

A No, sir.

Q How deep is this well, the Carlson Federal "A?"

A The total depth is 6,050 feet.

Q Do you have logs, electrical logs of the well?

A Yes, sir.

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

Q I hand you Atlantic's Exhibit No. 2, and ask you to explain to the Commission what it is.

A Exhibit No. 2 is a portion of the total gamma ray neutron log run on this well. We cut out the upper portion of the log, which is above the Paddock zone. Copies of the complete log will be filed later with the completion forms. On this log we have

shown the top of each producing zone, the Paddock, which we have called the Glorieta here, the Blinebry, and the Tubb-Drinkard. We have also shown the perforated intervals in each of the three zones.

Q What is the top of your first formation there, the Justis-Paddock?

A The top of the Paddock is 4652 feet.

Q What is the base of it?

A The base of it is at the top of the Blinebry, Blinebry, or 5,024 feet.

Q What about the base of the Blinebry?

A The base of the Blinebry is at the top of the Tubb at 5,717 feet.

Q The bottom of the Tubb is what?

A That would be at the top of the Drinkard at 5,902 feet.

Q This log shows the perforations which were made in those separate formations?

A It shows the actual perforated intervals.

Q Is there anything else you would like to comment on in connection with this log?

A No, sir.

(Whereupon, Atlantic's Exhibit No. 3 was marked for identification).

Q Mr. Frost, refer to Atlantic's Exhibit 3, and explain to the Commission what it is.

A Exhibit 3 is a diagrammatic sketch of the triple completion installation. We drilled a 12¼ inch hole to 905 feet. Set 9 5/8 inch casing at 904.82. We used 5 centralizers at 551 feet, 650, 740, 839 and 900 feet. The cement was circulated and tested with 1300 pounds for 30 minutes. We drilled an 8 3/4 inch hole to 6050 feet. We set 7 inch casing at 6,047.70 feet. The top 99½ feet of this string is 7 5/8 casing to give us more clearance for hanging the tubing in the wellhead. 15 centralizers were used on 103 feet spacing from 4497 to 6042 feet. The top of the cement is at 2900 feet, and the casing was tested with 1500 pounds for 30 minutes.

Following completion of the well, 150 sacks of neat cement was pumped in the 7 inch 9 5/8 annulus; the bottom of the cement is circulated to 950 feet. The cement was pumped in with 700 pounds of pressure with 1500 pounds maximum pressure.

We show the Paddock zone, top at 4652 feet, the perforations, 4940 to 4976 feet. The tubing string for the Paddock zone consists of 2 3/8 inch O.D. buttress thread tubing, tubing that's bottomed at 5014.18 feet with a pump seating nipple at 4977.52.

The top of the Blinebry zone at 5,024 feet, perforations, 5336 to 5371, and 5386 to 5396. The tubing string for the Blinebry zone is also 2 3/8 inch O.D. buttress thread tubing. This tubing is bottomed at 5277.57 feet. A pump seating nipple is at 5239.45. This string of tubing is set in a retrievable dual bore packer, which is set at 5278.25 feet. The tubing was set in the

packer with 7000 pounds.

The Tubb-Drinkard zone topped at 5717, perforations at 5770 to 5784, 5830 to 5880 and 5892 to 5914. The Tubb-Drinkard tubing string is 2 3/8 O.D. buttress thread tubing. Tubing is bottomed at 5751.00 feet, and a pump seating nipple at 5707.38. This string of tubing is set in a permanent type packer set at 5743.02 feet. The tubing was set in the packer with 5000 pounds load.

Q Are all of these packers production type packers?

A Yes, sir.

Q In your opinion, will they efficiently prevent communication between the zones?

A In my opinion, they will.

Q Did you make any tests of the casing to determine that no leaks exist?

A Yes, we tested the casing with 1500 pounds for 30 minutes with no leaks prior to drilling out the plug. Now, wait a minute, I'll back up. That was after the plug was drilled.

Q In your opinion, will this type of installation prevent commingling of hydrocarbons between the separate strata involved?

A Yes, sir.

Q Are you familiar with the Rules and Regulations of the Oil Conservation Commission requiring certain tests to be made after this type of completion is complete and filed with the Commission?

A Yes, sir.

Q Did you run a cement bond log?

A Yes, sir. We ran a cement bond log following cementing of the oil string.

(Whereupon, Atlantic's Exhibit No. 4 was marked for identification).

Q I hand you Atlantic's Exhibit 4, which purports to be a cement bond log, and ask you to explain what it shows.

A This cement bond log shows the top of cement at 2900 feet. It also indicates the effectiveness of the bond between the cement and the casing. We have also indicated on this log the top of each producing zone, and the perforated intervals, the same as on the gamma ray neutron log.

Q Does it show that you got a good cement job in connection with this completion?

A It appears to be a good cement job.

Q By this triple completion, will you be able to determine the reservoir pressure in connection with each separate zone or strata involved?

A Yes, sir, we can. Each tubing string has a full bore to the bottom of the tubing or to the pump seating nipple, which will allow bottom hole pressure work.

Q Will this triple completion permit the measurement of oil and gas produced from each one of these reservoirs?

A Yes, sir.

Q Will it also permit you to determine the gas-oil ratio in connection with each strata involved?

A Yes, sir, with proper surface equipment.

Q Do you know whether or not these zones are flowing at the present time through the tubing?

A I'm not positive. The installation was just completed on June 4th, and I'm not positive that all three zones are flowing. The last report I had on Monday morning, they were preparing to swab in the lower zone.

Q In the event one or more of these zones do not flow, can you pump each zone separately, or arrange for the production separately by artificial means?

A Yes, sir. We can install subsurface hydraulic pumping equipment, conventional installation in each tubing string.

Q Will you explain briefly to the Commission how your hydraulic lift works or pumps?

A The hydraulic pump is a fluid driven production pump for producing a well which won't flow.

Q Do you insert a string of tubing inside of the tubing in each instance?

A Yes, sir. The pump will be run on a string of 3/4-inch tubing inside the 2-inch.

Q Is there anything unusual in regard to this completion, or is it more or less standard practice, as far as triple completions are concerned?

A I consider this about the same as a dual completion, except we have one more string of tubing in here.

Q There's no complications because of that?

A I don't think so.

MR. HINKLE: I believe that's all.

MR. NUTTER: Are there any questions of Mr. Frost?

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Frost, you are probably aware that a while back there was some questions raised as to the proper top of the Blinebry Pool in this area?

A I have heard something about that.

Q Is the perforated interval within the Blinebry zone in this well outside of the zone that was under question at that time?

A It's outside that zone.

Q So there is no problem as to where this well is perforated in the Blinebry?

A I don't think so.

Q Do you have the bottom hole pressure on the Paddock in this well?

A No. We have not run pressures,as yet.

Q Do you have bottom hole pressures on any Paddock wells that are in the near vicinity?

A No, sir, I don't.

Q How about GOR's? Do you have that on the well yet?

A No. We do -- we have tested each zone; however, I don't think the tests are representative. They were swab tests after the

zones were treated, and on those tests, I'm not sure how they obtained any of the gas measurements.

Q I was going to ask you about the bottom hole pressure, the GOR and the gravity of each of the three zones, but I presume that you don't have the information.

Q Not on this well, we do not.

Q Could you furnish us with a letter stating what the GOR's, the gravities and the bottom hole pressures are on these three zones in the immediate area --

A Yes, sir.

Q -- on your return home?

A Yes.

Q What kind of a packer is this upper retrievable packer, Mr. Frost?

A T-i-w-h-s-d-l packer. It's run on the number one string or the long string, and is set when weight is applied by the second string.

Q It's hanging from the long string with the setting activated by the weight of the intermediate string?

A That's right.

Q And you stated that you set that with 7000 pounds?

A Yes, sir.

Q Is there any possibility that artificial lift or any other mechanical action might occur which would cause that packer to unseat?

A With the hydraulic pumps, there's very little bottom hole movement of the tubing, and I don't think that will affect the setting of the packer or the seals.

Q And you do anticipate,in the event artificial lift is necessary, it will be hydraulic lift?

A Yes, it will.

Q Now, the lower packer is what?

A Baker 415-D permanent packer.

Q I'm not acquainted with this T-i-w-h-s-d-1 retrievable packer. I wonder if you could send me some literature on that packer when you return home.

A Sure will.

MR. NUTTER: Are there any other questions of Mr. Frost? He may be excused.

(Witness excused)

MR. HINKLE: I would like to offer in evidence Exhibits 1 to 4, inclusive.

MR. NUTTER: Exhibits 1 through 4 will be offered in evidence.

(Whereupon, Atlantic's Exhibits 1 through 4 were received in evidence).

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

MR. HINKLE: No, that's all.

MR. NUTTER: Does anyone have anything further to offer in Case 2302? We will take that case under advisement.

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 12th day of June, 1961, 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. 2302, heard by me on 6/7, 1961.

..., Examiner
New Mexico Oil Conservation Commission