BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 3, 1963

EXAMINER HEARING

IN THE MATTER OF:

Application of Continental Oil Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authorization for the dual completion (conventional) of its Rattlesnake Well No. 144, located in Unit N, Section 2, Township 29 North, Range 19 West, as a dual completion (conventional) to produce gas from the Upper Pennsylvanian formation and oil from the Lower Pennsylvanian formation, Rattlesnake Pennsylvanian Field, San Juan County, New Mexico.) CASE 2726

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. NUTTER: Call Case 2726.

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

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, appearing for the Applicant, in association with Mr. Gordon Mayberry, a member of the Colorado Bar. Mr. Mayberry will present the case.

MR. MAYBERRY: If the Commission please, this is the application of Continental authorizing dual completion of its Rattlesnake Well No.144 located in Unit N, Section 2, Township 29 North, Range 19 West, San Juan County, New Mexico. If approved,

such dually completed well will produce from two common sources of supply; gas only from the Hogback zone of the Pennsylvanian, and oil and gas from the Rattlesnake zone of the Pennsylvanian in the Rattlesnake Field.

We have one witness, Mr. Fred Van Matre, and ask that he be sworn at this time.

(Witness sworn.)

FRED VAN MATRE

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

DIRECT EXAMINATION

BY MR. MAYBERRY:

Q Will you please state your name?

A Fred Van Matre.

Q How do you spell your last name?

A V-a-n M-a-t-r-e.

Q Where do you reside?

A Durango, Colorado.

Q What is your occupation?

A Petroleum Engineer, Continental Oil Company.

Q Have you previously testified before this Commission?

A No.

Q Would you briefly state the extent of your education and experience as a petroleum engineer?

A I graduated in 1956 from Colorado School of Mines with

a Bachelor of Science Degree in Petroleum Engineering. Since this time I have been employed by Continental Oil Company in primary and secondary oil recovery operations, and work in natural gas and gasoline plants.

MR. MAYBERRY: We will offer Mr. Van Matre as an expert Petroleum Engineer.

MR. NUTTER: Mr. Van Matre is qualified as an expert.

Q (By Mr. Mayberry) Are you familiar with the Rattlesnake Field in San Juan County, New Mexico?

A Yes, I am.

Q I'm going to hand you what has been marked here as Exhibits A, B and C.

(Whereupon, Applicant's Exhibits Nos. A, B, and C marked for identification.)

Q I'm referring to what has been marked as Exhibit A and ask you to state what that is, please.

A Exhibit A is a plat showing the location of the wells that have been penetrated in the Pennsylvanian in the Rattlesnake Field, San Juan County, New Mexico.

Q Do you accept this Exhibit A as an accurate portrayal of those locations?

A Yes, I do.

Q Referring to Exhibit B, will you state what that is?

A Exhibit B is a schematic diagram of the proposed dual completion of Rattlesnake Well No. 144 that we are seeking in this

hearing.

Q Was Exhibit B prepared by you or under your supervision?

A Yes, it was.

Q Now referring to Exhibit C, will you please state what that is?

A Exhibit C is a gamma ray neutron log of the Rattlesnake well, Well No. 144, from a depth of 4500 feet to total depth of 6689.

Q Does that log have reflected on there your interpretation as to tops of the various zones in Well No. 144?

A Yes, it does.

MR. MAYBERRY: We'll offer Exhibits A, B, and C at the present time.

MR. NUTTER: Is the witness going to discuss these exhibits a little further?

MR. MAYBERRY: Well, we will go into them further. Are those accepted?

MR. NUTTER: We'll wait and see what he has to say about them.

MR. MAYBERRY: Fine.

Q (By Mr. Mayberry) Now referring to Exhibit B, will you please describe the manner in which the Well No. 144 was drilled and completed?

A Rattlesnake 144 was drilled and completed June, 1962;

the hole was drilled from surface to total depth of 6689. We set 313 feet of 13-3/8ths surface casing. The hole was then air drilled to 4500 feet and intermediate string of 9-5/8ths was set from surface to 4500 feet. We cemented out the shoe in the 9-5/8ths to 3,000 feet from surface. A stage collar was run in the 9-5/8ths at 987 feet, and we cemented the stage collar to 500 feet from surface, and this was to protect the Dakota formation which is productive in the area. We then drilled to 6558 feet with air, and while drilling the Hogback zone, we encountered a gas flow that was measured to be a million feet a day. At this time at 6558, a liner was run from 4270, hung in the 9-5/8ths to 6558 feet, and was cemented the entire length of the liner.

The gas that was encountered in the Hogback zone, at that particular time we encountered gas there, we had no market available so the well was drilled to TD of 6689 to the original objective horizon, which was the Rattlesnake zone, and a 4-1/2 inch liner was then run from TD of 6689 to 6514. The well was then placed on pump from the Rattlesnake zone and was capable of making 40 barrels of oil a day, 80 barrels of water a day, and 40 MCF of gas per day.

Q And the well was then completed initially in the Rattlesnake zone?

A That is correct.

Q Referring to Exhibit A, the Well No. 144 to which you have just referred, is that marked in red on Exhibit A?

A Yes, it is.

Q Is it your opinion that the Hogback and Rattlesnake zones are separate and common sources of supply in the Pennsylvanian in Well No. 144?

A Yes, I do think so. At the present time the Rattlesnake zone is shut-in and we have set a Baker Model "C" retrievable type bridge plug below the Hogback zone, which has been perforated from 6402 to 6406, and 6442 to 6446. A Baker Model "R" Packer has been set on tubing above the Hogback perforations. We have tested the Hogback zone and it is capable of making an open flow potential of a million feet a day. We have obtained bottom hole pressure information on this zone, and the original reservoir pressure obtained with the pressure bomb was 2808 pounds.

MR. NUTTER: 2808?

A Yes, sir. The Rattlesnake zone, which, of course, was the original producing zone, we have observed the pressure in the Rattlesnake zone throughout the field. If you will note on Exhibit A, Well No. 140 was completed in the Rattlesnake zone and has been a pressure observation well. On November 14th of 1962, the pressure was measured in the Rattlesnake zone and it was 1112 pounds. The original pressure in this reservoir was 1600 pounds in the Rattlesnake zone.

Q In your opinion, from the testimony that you have just given, this differential in pressures between the Rattlesnake and Hogback zones reflects the separateness and isolation of these

two pools, isn't that correct?

A Yes, sir. The difference in pressures plus the fact, the information we have on core analysis shows that these two zones are separated by shale barriers, and we do not believe they are in communication, with this impervious shale, plus the pressure information we have which shows that the Rattlesnake zone will produce oil and associated gas, while the Hogback zone is primarily a dry gas zone.

Q Is this same conclusion further verified by Exhibit C, the gamma ray neutron log?

A Yes. In correlating the log throughout the area with our core analysis, shale barriers are predominant throughout the area, and we can correlate it.

Q Will you describe the manner in which you propose to dually complete this well?

A We plan to pull the Baker "C" bridge plug that is in the hole now in the Baker Model "R" Packer. A Baker permanent type production packer would be set in the 7-inch pipe at approximately 6480 feet. That would be above the Rattlesnake zone and below the Hogback zone. Oil would be produced from the Rattlesnake zone through tubing with conventional pumping equipment, and the Hogback gas zone would be flowed between the tubing casing annulus.

Q At the present time, are you producing from the Rattlesnake or Hogback zone?

A From the Hogback zone.

Q Did you obtain permission for seating the retrievable plug from the Aztec office of the Commission?

A Yes, we did. We talked to them on the phone and had clearance to make this temporary setup.

Q Is it your opinion that the procedure which you have just described as to the method of dually completing this well, that this will prevent communication between the two common sources of supply?

A Yes, I do, and this will be verified by the packer leakage tests.

MR. MAYBERRY: We will offer Exhibits A through C.

MR. NUTTER: Continental Exhibits A through C will be admitted in evidence.

(Whereupon, Applicant's Exhibits A, B, and C admitted in evidence.)

MR. MAYBERRY: We have no further questions.

MR. NUTTER: Does anyone have any questions?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Van Matre, you presently do have a market for the Hogback gas?

A Yes.

Q What was your GOR in the Rattlesnake zone?

A 1,000. The well is currently capable of making 25 barrels of oil and --

Q What is the gravity?

A 42.

Q How about liquids?

A At a million feet a day, when we tested the well it made four barrels of condensate.

Q What is the gravity?

A I don't remember.

Q Is it a high density condensate?

A Yes, I would say about 60.

MR. NUTTER: Anything further of Mr. Van Matre? He may be excused.

(Witness excused.)

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

MR. MAYBERRY: No.

MR. NUTTER: Does anyone have anything else? 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 Proceedings before the New Mexico Oil Conservation Commission was reported by me; 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 21st day of January, 1963.

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. 2726 heard by me on 1/3 63.

New Mexico Oil Conservation Commission