



## DIRECT EXAMINATION

BY MR. KASTLER:

Q Will you please state your name, by whom you are employed and in what position?

A John Hoover, employed by Gulf Oil Corporation as District Production Engineer, Roswell, New Mexico.

Q Have you previously testified before the New Mexico Oil Conservation Commission and qualified as an expert witness as a petroleum engineer?

A Yes, sir.

MR. KASTLER: If the witness' qualifications are satisfactory, I would like to proceed.

MR. NUTTER: They are, and please do.

Q (By Mr. Kastler) What is Gulf seeking in this application?

A We are requesting approval of a triple completion for the W. A. Ramsay (NCT-C) Well No. 4 in the Fusselman, Montoya, and Waddell Pools, North-Justis Field, Lea County, New Mexico.

Q Have you prepared a lease plat to illustrate the lease and well?

A Yes, sir. It is marked Exhibit No. 1. On this plat, the W. A. Ramsay (NCT-C) lease is outlined in red and described as Section 36, Township 24 South, Range 37 East. Well No. 4 is circled in red, and it's located 330 feet from the south line and 430 feet from the west line of this Section 36.

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It might be noted on this exhibit there are two Well No. 4's. The one that is not circled in red is a Langley-Mattix well operated by a sub-lessee. Gulf's W. A. Ramsay (NCT-C) Well No. 4 was spudded on October 29, 1962. The drilling has been completed; however, the well is not completed as yet.

Q Have there been similar triple completions in this pool in the same three zones?

A To my knowledge, there has not been a similar triple; however, these zones are produced in other offset wells.

Q Which wells, referring to Exhibit No. 1?

A Texaco's G. L. Irwin No. 5, which is a west offset to our Well No. 4, is completed in the Fusselman, Waddell, and Montoya. In addition it is completed in the Blinebry. Amerada's State NJA Well No. 3 in the Northeast Quarter Northeast Quarter of Section 2, 25, 37, is completed in the Fusselman. The West States Petroleum -- or Williams Petroleum West States Federal No. 7, Northwest Quarter Northwest Quarter, Section 1, 25, 37, is in the Fusselman.

Q Will you please explain what is shown on Exhibit 2?

A Yes, sir. This Exhibit 2 is a log of the Ramsay "C" Well No. 4, and on this log we have listed the top of the producing formation. The top of the Fusselman is shown at 6811, the top of the Fusselman pay at 6947, the base of the Fusselman pay, 7,080 feet. The Fusselman perforations are 6988 to 6996. The top of the Montoya is shown at 7,098 feet, the base of the



Montoya pay, 7,165 feet. The existing Montoya perforations are 7,110 feet to 7,114 feet. The top of the Waddell pay is at 8,074 feet, the base of the Waddell pay, 8,120 feet. The Waddell perforations are 8,110 feet to 8,114 feet.

Q Will you please explain what is shown on Exhibit 3?

A Exhibit 3 is a schematic of the proposed triple completion, and it shows that we have 13-3/8 inch casing set at 1,000 feet. The cement was circulated. We have 9-5/8 inch casing set at 3480 feet, cemented with 350 sacks. Temperature survey indicated top of cement at 2295 feet. We have 7-5/8 and 7-inch casing set at 8155 feet, cemented in two stages with a D.C. tool at 6,310 feet; temperature survey indicated the top of the cement at 3675 feet and 6440 feet.

The total depth of the well was 8155 feet, plugged-back depth, 8123 feet. We will have a Baker Model "D" Packer set at 8,025 feet; a Brown Oil Tool Intermediate Production Packer set at 7,046 feet. We will have a parallel string anchor at 6,977 feet, three strings of 2-3/8 inch tubing; and the perforations for the Fusselman are shown as 6988 feet to 6996 feet. The Montoya perforations are 7,110 feet to 7,114 feet. The Waddell perforations are 8110 feet to 8114 feet. On the Montoya, we originally perforated 7104 to 7114. We ran the packer and we had indicated that we had communication between the Fusselman and the Montoya. We pumped 40 sacks of cement into the Montoya perforations and then re-perforated 7110 feet to 7114 feet. We



retested and we had no evidence of communication.

Q What bottom hole pressure and gravity information do you have as to each of these three zones?

A We have not obtained a bottom hole pressure in our well; however, we have obtained the reported bottom hole pressures in the Texaco's G. L. Irwin (NCT-2) Well No. 5, which, as previously stated, is a west offset to our Well No. 4. The Fusselman had a pressure of 2316 pounds at a datum, pool datum of a minus 3900 feet, a 50-hour close-in API gravity of 36 degrees. Montoya, 2458 pounds at a minus 3940 feet, 49-1/2 hour close-in API gravity, 43.1 degrees. The Waddell, 2481 pounds at a minus 5,093 feet, 49-hour close-in, the API gravity, 41-1/2 degrees.

Q Do you have any production tests on the W. A. Ramsay (NCT-C) Well No. 4?

A Yes, we had some tests made on our well; however, they are not final completion tests. On the Waddell, through the perforations 8110 feet to 8114 feet, it flowed 30 barrels of oil, no water; 2-3/8 inch tubing, 16/64-inch choke in 3-1/2 hours, tubing pressure, 375 pounds. We had no measurement on the gas volume.

The Montoya, through the perforations 7110 feet to 7114 feet, it flowed 164 barrels of oil, 6 barrels of water; 2-3/8 inch tubing, through a 24/64 choke and a 14/64-inch choke in five hours, tubing pressure of 350 pounds; again no measurement on the gas volume.

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The Fusselman, through the perforations 6988 to 6996 feet, flowed 103 barrels of oil, no water; 2-3/8 inch tubing, 22/64-inch choke in 15 hours, tubing pressure 300 pounds; again the gas volume was not measured.

Q Do you have any information concerning the economics involved in making the triple completion?

A We estimate the cost of the triple completion to be \$180,000. If we dualled a well in the Montoya and the Waddell, we estimate that cost would be \$160,000. A single zone well to the Fusselman would cost, is estimated to cost \$79,000. That would make a total for two wells of \$239,000. The resultant saving is estimated at \$59,000.

Q Would the granting of this application be in the interest of prevention of waste and the protection of correlative rights?

A Yes, sir.

Q Were Exhibits 1, 2, and 3 prepared at your direction and under your supervision?

A Yes, sir.

MR. KASTLER: This concludes my questions on direct examination, and I would like to move that Exhibits 1, 2, and 3 be admitted into evidence.

MR. NUTTER: Gulf's Exhibit 1 through 3 will be admitted into evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 3 admitted in evidence.)



## CROSS EXAMINATION

BY MR. NUTTER:

Q I take it by squeezing the perforations in the Montoya after you had the communication between the Fusselman and Montoya, you thought the communication was not in the packer but behind the pipe?

A Yes, when we had the indication we had communication, we first thought it was around the packer; but it was established it was not around the packer but outside the pipe. We set a packer -- I can give you our procedure for squeezing it off, if you would like.

Q All right, sir.

A After we determined that we did not have communication around the packer, our corrective measure, we set a retrievable plug at 7200 feet and then we dumped 50 feet of sand on top, which brought the sand up to 7155 feet. We set a cement retainer at 7,050 feet. We pumped through the retainer at a rate of four barrels per minute with 1,000 pounds and fluid circulated, that was up through the tubing casing annulus, and then we pumped 40 sacks of cement into the Montoya perforations at 2,000 pounds. The casing valve was open, the fluid was returning by the casing during that operation.

After the cement set, we went back in and drilled out stringers and the solid cement, the retainer, cleaned out to the bottom plug, and then we ran a Baker four bore packer set at,

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rental tubing, and set it at 7,242 feet which would be between the Fusselman and Montoya. We pressured the tubing to 1200 pounds with the casing tubing annulus loaded and the casing valve opened, and there was no circulation.

Q Has the packer leakage test been run since you set this Baker Model "DS" 92 short string packer at 7046?

A No, sir, we were in the process of running a packer leakage test when this evidence of communication became known. We have now, of course, corrected the communication; and as of yesterday, they were going back in the hole with their triple completion equipment and they will rerun a packer leakage test; and we did, before we reran the triple completion equipment set a packer between the Fusselman and the Montoya, and swabbed the Montoya off and flowed it and watched the casing pressure, which would have been the Fusselman; and there was no change. So it indicated we had our communication sealed off, and like I say, a packer leakage test will be started again.

Q What does the Model 92 Brown Packer rely on for seating; is that set by hydraulic mechanism or tension or compression or what?

A Compression. It's set by compression on the short string. It has the hydraulic hold-down, which is set hydraulically to hold the packer in place against, what they say, high differential pressure so it cannot move.

Q You have approximately 140 pounds of differential

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across that?

A It's small, yes, sir.

Q Retrievable packer, then?

A That's right.

MR. NUTTER: Any other questions of Mr. Hoover? He may be excused.

(Witness excused.)

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

MR. KASTLER: Nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2751? We will take the case under advisement.

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