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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
November 12, 1968

IN THE MATTER OF:

Application of Texaco, Inc., for a  
waterflood project, Lea County,  
New Mexico

Case No. 3933

BEFORE: D. S. NUTTER

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3933.

MR. HATCH: Application of Texaco, Inc., for a waterflood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly of Gilbert, White, Koch and Kelly. I have one witness and ask that he be sworn.

(Witness sworn.)

(Applicant's Exhibits 1 through 4 marked for identification.)

\* \* \* \* \*

DALE M c CARTER, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer, please?

A My name is Dale McCarter, with Texaco, Incorporated, Hobbs District, Hobbs, New Mexico. I am Assistant District Engineer in charge of the Reservoir Section.

Q Now, refer to what has been marked as Exhibit No. 1, the plat of the area. Would you explain briefly what Texaco seeks by this application?

A Texaco seeks permission to institute a pilot waterflood project by injection of water into its C. H. Lockhart Federal NCT Well No. 8 located in Unit P of Section 18, Township 22

South, Range 38 East. Also further seek a procedure whereby this pilot may be expanded without showing response and that the project be governed by Rule 701 through 703..

Q Would you locate the proposed injection well?

A On Exhibit 1, there's a red arrow pointed to the well, it's in Unit P of Section 19.

Q And who are the offset operators?

A The offset operators are American Petrofina, Gulf, Humble, Mabe Royalties, Mark Production and Penrose Production Company.

Q They have all been notified of this application?

A They were notified by a copy of our hearing request, yes, sir.

Q What is the current status of the injection well?

A The well is presently a single completion in the Drinkard formation. It is averaging about three barrels of oil per day and about a half a barrel of water per day.

Q Now, Texaco has a lease that covers the east half of Section 18, the east half of Section 18 and the north half of the northwest quarter, is that right?

A That is correct. That is known as our C. H. Lockhart Tract 1, Federal Lease.

Q Do you have an exhibit that shows the performance

curves and production history on the subject well and lease?

A Yes, this is marked Exhibit No. 2. This shows the production parameters for the lease on the Drinkard zone including a gas-oil ratio, oil production, number of wells and the water production. The current oil production on the lease is approximately 4.3 barrels of oil per day per well, or around 850 to 900 barrels of oil per month. The current lease gas-oil ratio is approximately 6,000 to 1. There are seven producing wells, water production for the lease is about four barrels of water per day.

Q Do you have any wells that anywhere approach their allowable?

A No, sir. I think the maximum is about 10 barrels of oil per day.

Q In your opinion, are the Drinkard wells on this lease in the advanced stage of depletion?

A Definitely yes, sir.

Q How many Drinkard wells do you have on the lease?

A There are seven Drinkard wells on the lease.

Q What is the drive mechanism of this reservoir?

A The drive mechanism is solution gas.

Q Now, what will the source of your water be that you will be injecting?

A The source of water will be that water produced in conjunction with oil and/or gas production from our C. H. Lockhard Federal NCT 1 Lease, our Dolly Ballinger lease, our W. L. Nix Lease, our A. H. Blineberry, NCT 1 Federal Lease, from the South Paddock Pool, from the Blineberry oil and gas pools, from the Tubb Oil and Gas Pools and from the Drinkard Pool.

Q Are all those leases shown on Exhibit 1?

A Yes, sir, there is a portion of the A. H. Blineberry NCT 1 Lease which is not shown, which is, that would be in, well, this is one of those townships that hits the State line so that the numbers are a little bit awry. It's immediately southeast of the Section 20, it's a 320 acre lease being the west half of the section.

Q Do you know whether this is State, Federal or fee land?

A All these leases are Federal Lands.

Q What will be the amount of water you will be injecting initially in this well?

A Initially the current water production is approximately 110 barrels of water per day.

Q Do you think that will go up?

A Yes, I do.

Q How about your pressure?

A At this pressure, we are estimating the maximum of 300 pounds. This is just an educated estimate of what it would take to inject this water.

Q Now, referring to what has been marked Exhibit No. 3, the diagrammatic sketch, would you explain the proposed installation to the Examiner?

A Exhibit No. 3 shows the surface casing, 13 and 3/8ths inch set at 398 feet, the cement circulated to the surface; the 8 and 5/8ths inch intermediate string set at 2901 feet and cement circulated to the surface. The production string 5 and 1/2 set at 7200 feet, and the top of the cement is at 3130 feet. The proposed installation is to install a string of 2 and 3/8ths-inch internally plastic-coated tubing set at approximately 5750 feet on a packer, the casing tubing annulus to be loaded with inhibited water. The perforated interval is indicated immediately below the packer setting depth.

Q You said you were going to have inhibited fluid in the annulus?

A Yes, and a pressure gauge.

Q Is there any fresh water in this area?

A Yes, the Ogallala is fresh water bearing. It is covered by both strings, the surface and the intermediate,

which was circulated, the cement was circulated.

Q Are there any producing zones above your perforations?

A Yes, the Paddock and the Blinebry and the Tubb zones produce above the Drinkard zone in this area.

Q In your opinion, will this installation protect any fresh water zones or any other oil producing zones from migration of your injected fluid?

A Yes, I believe it will.

Q Now, going back to Exhibit No. 1, the plat, the perforations that you will be injecting this water through in your well No. 8, are they similar or the same as the Drinkard zone in any of the other wells that adjoin?

A Yes, they are all identical.

Q Do you have an estimate of secondary recovery potential if this flood is successful?

A I would estimate that a maximum of 75% of primary would be recovered due to the type of pay we are dealing with which is nothing but a bunch of stringers located within the Drinkard zone. I would, just based upon the primary performance, this is probably around 65,000 barrels of oil. If it is successful, we will expand it to pilot.

Q Do you feel that injecting water into this well would have any adverse affect on any of the adjoining wells?

A At the present time, no, I do not think it would. There's always a possibility of water, premature water break-through, especially because of the stratified nature of the reservoir.

Q Would you say as a probability that any effect of an adjoining wells would be beneficial rather than harmful?

A I would say yes.

Q In your opinion, would the granting of this application prevent waste by allowing you to recover oil that would otherwise be left in place?

A Yes, and also serve as a salt water disposal source for our water that is produced in this area of the field.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A We haven't admitted Exhibit 4 which is just a log of the well.

Q Exhibit 4 is the log?

A Log of the well.

Q Do you have anything to say on that?

A No.

Q Does that show the perforations?

A No, they were indicated on Exhibit 3, which is the diagrammatic sketch. All of these exhibits were prepared



either by me or under my supervision.

MR. KELLY: I would move Texaco's Exhibits 1 through 4 be admitted into evidence at this time.

MR. NUTTER: Texaco's Exhibits 1 through 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 4 admitted in evidence.)

MR. KELLY: That's all I have on direct.

CROSS EXAMINATION

BY MR. NUTTER:

Q I notice from your plat that the Lockhart No. 3 immediately to the west has been abandoned in the Drinkard?

A Yes.

Q Do you have any plans for the present for reactivating that well in the Drinkard?

A At the present time, no. If you remember correctly, this is the well that we recently received approval to commingle the Blinbry and Paddock zone. The Drinkard, as pointed out at that hearing was lost to us because of junk in the hole. If response is received, we will probably make a further attempt to try to recomplete that well in the Drinkard zone.

Q It would depend on whether you have response in the other wells around this injection well?

A Yes, the same is true of the Blinebry No. 9, the immediate south location which has been plugged back to the Blinebry zone from the Drinkard.

Q Since we only have --

A We have three wells which will be in the porject area, that would be Wells No. 4, 9 and 8.

Q Are any secondary recovery operations being carried on in the Drinkard?

A In the Drinkard Pool, I think it's about five and a half to six miles to the northwest of this map, Gulf has a Central Drinkard Unit which has a pilot which if I'm not mistaken, is a double-five spot, which I believe has been injected since last August or September and which has not shown any response to date.

Q Now, you have four perforated intervals that are spread over approximately 300 gross feet there --

A Yes, sir.

Q -- do you plan to try to selectively inject into any of those --

A No, sir.

Q -- or inject in all of them --

A Inject in all of them. We will probably run an injectivity profile on all of the wells within 6 months, this

is normal procedure, and Texaco policy on injection wells.

Q To see where the water is going?

A To see where the water is going. There is one zone of high permeability or relatively high permeability because there's not any high permeability in this formation of the field. I believe this is called the Andrews Zone of the Drinkard, the lowermost zone of the Drinkard which is productive in the southeast portion of the field. We suspect that this is where the water will go.

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

(Witness excused)

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

MR. KELLY: Nothing further.

MR. NUTTER: Does anyone have anything further  
they wish to cover in Case 3933? We will take the case  
under advisement.

I N D E X

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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, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand this 25th day of November, 1968.

*Ada Dearnley*  
 Ada Dearnley  
 I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Bernalillo hearing of Case No. 3933  
 heard by me on 11/22, 1968.  
*[Signature]*  
 New Mexico Oil Conservation Commission