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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
November 20, 1968

EXAMINER HEARING

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IN THE MATTER OF: )

Application of Skelly Oil Company ) Case No. 3947  
for a waterflood project, Lea County, )  
New Mexico. )  
-----

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 3947.

MR. HATCH: Case 3947. Application of Skelly Oil Company for a waterflood project, Lea County, New Mexico.

MR. JACOBS: If the Commission please, Ronald Jacobs appearing for Skelly Oil Company. We have one witness we would like to have sworn, please.

MR. UTZ: Are there other appearances in this case? You may proceed to swear the witness.

(Witness sworn.)

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

LARRY R. HALL

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

DIRECT EXAMINATION

BY MR. JACOBS:

Q First of all, if the Commission please, the Commission's file will reflect a letter from L. C. White, Attorney, Santa Fe, New Mexico, entering his appearance as local counsel for Skelly in this matter. Would you please state your name, by whom you are employed and in what capacity?

A I am Larry R. Hall; I'm employed by Skelly Oil Company in Hobbs, New Mexico as Advance Production Engineer.

Q Mr. Hall, have you testified before this Commission on prior occasions as a petroleum engineer and had your qualifications accepted?

A Yes, I have testified before the Commission before.

Q Are you familiar with the application in this case?

A Yes, I am.

Q Would you explain what is being sought by this application?

A Case Number 3947 is an application of Skelly Oil Company for authority to institute a pilot waterflood project by injecting into the Skelly E. L. Steeler No. 6 in the Langlie-Mattix Pool, Lea County, New Mexico.

Q Now, Mr. Hall, referring to what has been marked for identification as Exhibit No. 1, would you relate to the Examiner what this exhibit shows?

A Exhibit No. 1 is a copy of a plat showing a portion of the Langlie-Mattix Pool which is aerially the largest and one of the earliest developed pools in Southeastern New Mexico. This plat shows the location of the proposed

injection well, the Steeler No. 6. It is circled in red on the map and is located 1980 feet from the south line and 1980 feet from the east line, Section 17, Township 23 South, Range 37 East, Lea County, New Mexico. This exhibit also shows the locations of ownership of all the leases and wells within a two-mile radius of the proposed injection. Also outlined on this exhibit is a proposed Skelly Penrose C Unit boundary of which Skelly is the unit expediter. We have made a secondary recovery study on this proposed unit area and our unit negotiations have progressed to a point where work has begun on participation and agreement. Now, this proposed unit will not be effective prior to January 1st, 1969. Because of the New Mexico Oil Conservation Commission deadline for elimination of surface disposal on unlined pits, we must make provision for disposal of produced water from the leases within this area. It is probable that Skelly Oil Company will waterflood the Skelly leases within this proposed Penrose C Unit boundary, either under the unitization operations that are now planned or as a smaller unit with cooperative lease-line agreements. Skelly feels that the flood ability of the Langlie-Mattix has been established based on the performance of the pilots and other floods in the area. The waterflood pattern will utilize many of the same wells as injections for either of

the unitized projects. The modified 80-acre five spot pattern is to be used for the smaller unit and a modified nine spot pattern will be utilized for the unit that is now proposed. Now, the Steeler 6 was selected as the perspective pilot injection well since it is one of the wells common to both of these projects. The proposed five spot around the Steeler 6 is only partially developed. There are two direct Skelly producers, one diagonal Skelly producer, one undeveloped location and one plugged back well. Skelly Oil Company has purchased 120 acres of the Langlie-Mattie rights from Samadan. These are in Section 17, the east half of the southeast quarter and the southeast quarter of the southwest quarter, Section 17, Township 23 South, Range 37 East.

Q Now, Mr. Hall, referring to what has been marked for identification as Exhibit No. 2, would you relate to the Examiner what this exhibit shows?

A Exhibit No. 2 is a down-hole schematic diagram of the proposed pilot injection well, Steeler No. 6. It shows the size and setting depth of the casing, quantities used in tops of cement, size and setting depth of the tubing, the location of the packer and the completion interval.

Steeler 6 was drilled to a total depth of 3685 in March of 1954. Current production on this well is approximately one barrel of oil per day and five barrels of water per day. Cumulated oil production is approximately 24,000 barrels. The injection will be confined to the Langlie-Mattix interval. The injection will be down internally coated tubing below a tension packer into the overall perforated interval 3572 to 3632. Initial injection rates are approximately 500 barrels of water per day are anticipated with an additional 200 barrels per day being added in the immediate future from the proposed Blinebry development in the area. Our anticipated maximum injection pressure is 1800 psi.

MR. UTZ: 1800?

THE WITNESS: Yes, sir. The annulus will be loaded with an inert fluid and a pressure gauge attached. A copy of the portion of the radio activity log on this well has been shown as Exhibit No. 3. This exhibit shows the completion interval and formation tops.

Q And the log that you mentioned is Exhibit 3 and so marked, is that correct?

A That is correct.

Q Now, referring to what has been marked for

identification as Exhibit No. 4, Mr. Hall, would you explain to the Examiner, to the Commission, what this exhibit shows?

A Presented as Exhibit 4 is an analysis of the water produced from the J. C. Johnson No. 2 which produces approximately 90 percent of the water that will initially be injected into the proposed injection well. This analysis shows the water to be mineralized and unsuitable for general use.

MR. UTZ: Where is that well located?

THE WITNESS: The well is located in Unit A of Section 20. It's diagonally southeast of the proposed injection well.

MR. UTZ: Thank you.

THE WITNESS: Currently this water and similar waters are being disposed of in surface pits within the proposed unit boundary and other Skelly leases in the area. Initial injection water is to be from the same formation into which injection is to be made. Upon Commission approval of that application injection well will be made available for injection of the produced water within the proposed unit area and other Skelly leases in the immediate area.

Q Mr. Hall, in your opinion, what will be the affect of the injection of water into the Steeler No. 6 on the recovery of oil in this area?

A It is my opinion that the injection of water into the proposed injection well will definitely increase production in offsetting wells. The Langlie-Mattix Pool has a large number of waterflood units that are now in operation and all known projects which have utilized pilots have expanded or in the process of expanding to full-scale operation. Secondary recoverable oil by waterflood is estimated at 75 percent of ultimate primary recovery for the proposed Skelly Penrose C Unit. As previously stated, Skelly will, in all probability, flood the entire Skelly leases within this proposed unit even if the unit negotiations fail and the unit does not become effective. Therefore, Skelly request that provisions for administrative approval be set out in the order to permit administrative expansion on the Skelly leases.

Q Mr. Hall, will the granting of the application result in waste?

A No, the result of this application will be to provide for a place for immediate down-hole injection of the produced water in the area which is presently being disposed



of in surface pits; also the injection of water into the proposed injection well is expected to increase production in the offsetting wells and thereby recover oil that might not otherwise be recovered.

Q Mr. Hall, will the granting of this application result in impairment of correlative rights?

A No, the granting of this application in my opinion will not result in any impairment of correlative rights.

Q Now, Mr. Hall, with regard to the productivity of the wells in the immediate vicinity of the Steeler 6, did you give the Examiner the approximate volume of oil that is being produced from each well?

A Yes. The lease total is 16 barrels per day; that is for the eight wells. Well No. 7, which is located in the Northwest of the Southwest has the highest productivity of six barrels per day. The Steeler 4, which is immediately south of No. 7 produces four barrels per day and the other six wells, to the nearest barrel, produce one barrel of oil per day.

MR. UTZ: Total of 16 barrels?

THE WITNESS: 16 barrels, yes, sir.

Q So that this is truly a proposed waterflood project?

A That is true, advance stripper stage of production.

Q Mr. Hall, were Exhibits one through four prepared by you or under your supervision?

A Yes, they were.

Q Mr. Examiner, we offer Exhibits one through four.

MR. UTZ: Without objection Exhibits one through four will be entered into the record of this case.

MR. JACOBS: That is all the direct testimony that we have Mr. Examiner.

CROSS EXAMINATION

BY MR. UTZ:

Q This well shown in the southeast, southeast, Section 17, is that a location or is that a well?

A With a BY underneath it with a six?

Q Right.

A That well has since been completed as a Blinebry.

Q That's a Blinebry oil well?

A That is true, yes, sir. At the time this map was prepared, they were still testing the well.

Q Now, the Cornell well immediately to the west of that is shown as a gas well?

A Yes, that's a Jalmat Gas Well.

Q Jalmat? Now, what type of pattern did you say that you intended to use?

A Under the full unit participation it will be a nine spot pattern. If the unit does not go into effect, Skelly would flood their leases separately, it will be an 80-acre five spot.

Q What type of coating do you intend to use on your tubing?

A As of right now, we are looking at cement line tubing.

Q In the interval behind the five and a half inch from 3126 up to 1130 is there any fresh waters or any production in that area?

A Not to my knowledge. At 1130 feet should take the surface cement -- this surface pipe cemented to surface and that is below any fresh water sands to my knowledge in the area.

Q No oil production?

A No oil production between the top of the cement and the surface?

Q Yes.

A No, sir. There may be some Yates gas.

Q On your Exhibit No. 4, do I interpret that 2670 to

be parts per million, or equivalent?

A Yes, milligrams per liter, which is essentially parts per million.

Q Plus the small correction?

A Yes, that's right.

Q Well, this water isn't really too salty, is it?

A It is not as salty as some of it, no, sir.

MR. UTZ: Any other questions of the witness?

He may be excused. The case will be taken under advisement.

(Witness excused.)

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STATE OF NEW MEXICO   )  
                                           ) ss  
 COUNTY OF BERNALILLO )

I, GLENDA BURKS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing 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 this 22nd day of November, 1968.

Glenda Burks  
 COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Bernalillo hearing of Case No. 3947, heard by me on Nov. 20, 1968.

Thomas A. [Signature], Examiner  
 New Mexico Oil Conservation Commission