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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO

October 28, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of David C. Collier for a  
waterflood project, Eddy County, New  
Mexico.

Case No. 4452

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: We have an apparent hardship case. This is Case No. 4452.

MR. HATCH: This is the application of David C. Collier for a waterflood project, Eddy County, New Mexico.

MR. LOSEE: Mr. Examiner, A. J. Losee of Artesia, appearing on behalf of the applicant. We have one witness, Mr. Ralph Gray.

RALPH GRAY,

a witness, having been first duly sworn, according to law, testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, residence and occupation.

A Ralph L. Gray, Artesia, New Mexico; Petroleum Engineering Consultant.

Q You have previously testified before this Commission and had your qualifications accepted?

A Yes, sir.

MR. LOSEE: Are Mr. Gray's qualifications acceptable, Mr. Examiner?

MR. UTZ: They are acceptable.

Q Mr. Gray, would you explain the purpose of this application of Mr. Collier?



A Mr. Collier purposes to initiate a waterflood injection project in the East Turkey Track Queen Pool. He also purposes to convert four of the present producing wells to water injection wells.

(Whereupon, Applicant's Exhibits No. 1 through 7 were marked for identification.)

Q Please refer to what has been marked as Exhibit 1 and explain what is portrayed on this exhibit.

A Exhibit 1 shows the applicant's leases in the yellow coloring and the border line for the proposed project is indicated by the red line. The proposed water injection wells are shown with the wells circled.

Q How many producing wells are there in the project area at this time, Mr. Gray?

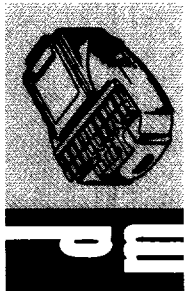
A There are eight wells.

Q Now, is this project area composed of one lease or are there more than one lease involved?

A There are more than one.

Q All right. For the Examiner, would you define the location of the different leases, two of which are State and two which are Federal?

A One Federal lease is located in the southwest quarter of Section 6, Township 19 South, Range 30 East. Another



Federal lease occupies the northwest quarter of Section 7 in the same Township. One State lease occupies the northeast quarter of the northeast quarter of Section 12, Township 19 South, Range 29 East. The remaining acreage in Sections 1 and 12 constitute the other lease.

Q Is the working interest ownership throughout this project area common?

A Yes, sir.

Q Now, the one well in the southwest, southwest quarter of Section 6, is that the only producing well on that Federal lease?

A Yes, sir. It is.

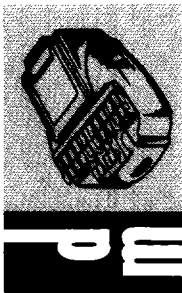
Q And has the applicant proposed to do anything with respect to unitization or pooling of this project area?

A Yes. The applicant has stated, if it is required, he will start work to form a unit.

Q And he is aware of the fact that although it can be approved as a project area, that the allowables cannot be transferred between these leases without an agreement between the lessor?

A Yes.

Q Please refer to what has been marked as Exhibit 2, being the log on one of the wells, and explain what is shown



on this exhibit.

A Exhibit 2 is a typical radioactive log. This is on the Leonard State No. 1 well and this log shows that the casing is perforated from 2,190 to 2,220 feet and indicates the producing sand. This just represents a typical log.

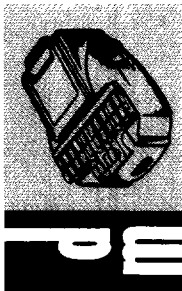
Q Okay. Please refer to what has been marked Exhibits 3, 4, 5 and 6, being the diagramatic sketch of the proposed injection wells, and explain what is shown by these sketches.

A These sketches show the location of the surface casing, the amount of cement that was used and in most cases the cement either circulated or came to a point near the surface. This also shows the location of the production string, size and amount of cement and the estimated top of cement behind the casing. In two cases the wells have an open section through the pay section below the casing and in two cases the production string was cemented through the pay and perforated.

Q Now, does the applicant propose to inject water down the casing in these wells?

A Yes. That is right.

Q What is the source of the water for this project?



A There is a shallow water well which was drilled several years ago to furnish water for drilling purposes and the applicant proposes to at least start the project with this water.

Q What will be the volumn and the pressure, injection pressure proposed by the applicant?

A It is estimated that these volumns will range up to about two hundred barrels per day per well and possibly with a maximum pressure of a thousand PSI.

Q Do you know anything about the quality of the water that is going to be utilized?

A I don't have an analysis on the water from this particular well. There is very little information on the water in this area. I was able to obtain a small amount of information from the Oil Commission office in Artesia and one well, water well, located in Section 10 of Township 18 South, Range 29 East showed a chloride content of two thousand thirty parts per million; a total solids of 5,670 parts per million. Another water well located in Section 24, Township 18 South, Range 29 East showed a chloride content of only fifty and total solids of 1,125.

Q Please refer to what has been marked as Exhibit 7, being the production history of the wells in the field, and



point out the important data shown on this exhibit.

A Exhibit 7 shows monthly oil production and water production and cumulative oil production through July, 1970 for each of these wells. I might call your attention to the fact that this table shows the ownership as it appears in the July, 1970 statistical report of the Oil Commission and, of course, the present owner is David Collier. It is evident from a study of this tabulation that these wells are very small and certainly are in the depleted category. Most of them produce in the neighborhood of one barrel per day or less. Apparently two wells make a small amount of water. The Leonard State No. 4 is shown to produce maybe two barrels of water per day and the Leonard State A No. 1 well produces smaller amounts. The cumulative recoveries show low primary recoveries as a whole and these -- most of these are in the nature of sixteen to eighteen thousand barrels per well. One well, the State R Well No. 3, has produced thirty seven thousand ninety barrels and this was the most recovery for any of these wells.

Q Now, would you care to hazard an opinion as to what might be recovered from secondary recovery operations in ratio to primary?



A Well, I don't really have any basis for predicting what might be recovered. Information on these wells is very scarce. Very little information and data are available, and, personally, I would hesitate to predict what the recovery would be.

Q It would be a marginal waterflood operation, would it not?

A Yes. I would say that it would be in the poor prospect category -- certainly not anything very prolific.

Q Would you assume that was one of the reasons the operator wished to inject down the casing rather than the utilization of tubing and packer?

A Yes. I think it is an economical situation and certainly you can't justify very large expenditures on this type of production.

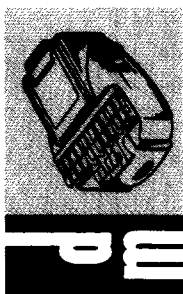
Q Were Exhibits 1 through 7 prepared by you or under your direction?

A Yes, sir.

MR. LOSEE: I move the introduction of Exhibits 1 through 7. I have no further questions.

MR. UTZ: Without objection, Exhibits 1 through 7 will be entered into the record of this case.

MR. LOSEE: That completes our direct examination.





CROSS EXAMINATIONBY MR. UTZ:

Q Mr. Gray, how old is the casing in these wells?

A Most of these wells were drilled, I think, in 1962, so they are relatively recent wells and approximately eight years old.

Q Do you propose to test the casing before you inject water?

A I haven't actually been informed by the applicant just what his procedure would be in converting these wells. I can't actually answer that question.

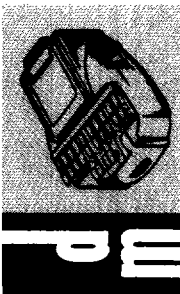
Q What would a string of tubing cost on a twenty-one hundred foot well?

A Well, by the time you -- it depends on whether or not you are going to coat the tubing. I don't really have a present day price of tubing. I'd just hazard a guess of somewhere around seventy-five cents a foot and then if the tubing is coated say with a cement liner or plastic lining, you'd have to add an additional twenty-five to thirty-five cents per foot.

Q Is this fresh water you are going to use for injection?

A Yes. It is relatively fresh.

Q It would be in the neighborhood of a thousand pounds,



would it not, the pressure?

A Yes. That would be close. This casing should be adequate for pressures substantially larger than that. I would guess that -- well, let's see -- some of this is four and a half inch casing. Yield pressure on that would be above four thousand pounds a square inch and on a seven inch -- I don't have the weight, but certainly the yield pressure on the seven inch would be very substantially in excess of what the injection pressure will be.

Q Now, I believe that you stated that you had four leases here.

A Yes, sir.

Q Now, is the Federal leases in Section 6 and Section 7 the same lease?

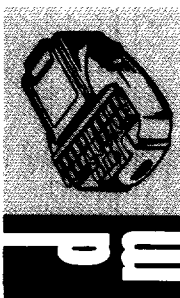
A No. They are different leases.

Q I can't read that bottom number. Is that 055087?

A 06, I believe it is, 066087 and I think the upper lease should have an A on it. Really it is 066087A.

MR. LOSEE: They are segregated portions of the same lease, but they are different leases under the Federal rules.

Q You stated that Collier would try to unitize or get a lease line agreement or which?



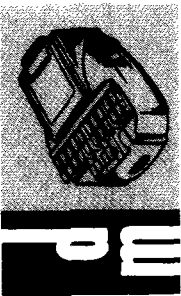
A Well, the applicant would like to initiate a partial flood, I think, to start with, with just possibly one injection well. I think he has in mind the Leonard State No. 4 well in the Northeast quarter of the Southeast quarter of Section 1 and he can get a lot of information in regard to the injectivity characteristics and also the capabilities of the water supply well and he can proceed with this part of the flood and then he stated that if it were necessary to form a unit, that this was what would be done then and I think that probably it will be necessary to unitize that.

Q Now, as to the Federal leases, is there a different interest in them?

MR. LOSEE: There may be a difference in a production payment or an override, Mr. Examiner. The working interest is the same throughout the unit. I kind of think one of these has a production payment to Tenneco and one of them has an override to Read Co. Incorporated.

Q As to the two State leases, how about the beneficiary and interest in those -- are they different?

MR. LOSEE: I cannot tell you with respect to the beneficiaries. The working interest is the same and, here again, I suspect there is a production payment on one and an override



on the other. I don't have any title opinions.

MR. UTZ: Any other questions?

MR. HATCH: One of the Federal leases would not have an injection well and one of your State leases would not have a producing well.

THE WITNESS: Yes.

MR. LOSEE: He is either going to have to unitize it or drill two other wells with this injection pattern.

THE WITNESS: I think the applicant feels that he can just inject into this one well while this unitization is going on and he can learn a great deal of information that would help them and then it can be all incorporated together.

MR. UTZ: I think it is pretty obvious we can't make one unit.

MR. HATCH: I think you already testified that the applicant realizes he cannot transfer any allowables or anything unless it is unitized or an agreement among all the parties of interest.

MR. UTZ: Any other questions of the witness?

You may be excused.

Statements in this case?

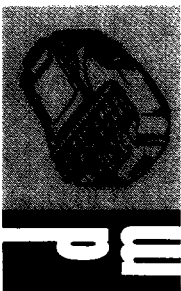
The case will be taken under advisement.

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STATE OF NEW MEXICO     )  
                                   ) ss.  
 COUNTY OF BERNALILLO    )

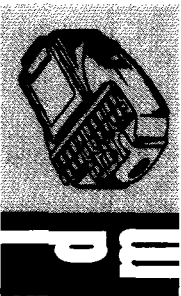
I, PETER A. LUMIA, a Court Reporter in and for the County of Bernalillo, State of New Mexico do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

*Peter A. Lumia*  
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 Peter A. Lumia, C.S.R.

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to hereby certify that the above  
 is a true and correct record of the proceedings  
 of the hearing of Case No. 4452  
 of the New Mexico Oil Conservation Commission  
 held on 10-28-70  
*[Signature]*  
 New Mexico Oil Conservation Commission

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