

and Gilbert, resident counsel. Mr. Examiner, we ask that this case and the companion Case 2673, which is an application for authority to inject into the area covered by the proposed Unit, be consolidated for the purposes of taking testimony; and we have two witnesses and anticipate 15 or 20 minutes.

MR. BUELL: For Pan American Petroleum Corporation, Guy Buell.

MR. UTZ: Cases 2672 and 2673 will be consolidated for purposes of testimony only.

MR. JACOBS: We have two witnesses. We ask that they both be sworn.

(Witnesses sworn.)

MR. JACOBS: Our first witness, Mr. C. R. Davis.

C. R. DAVIS

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

DIRECT EXAMINATION

BY MR. JACOBS:

Q Mr. Davis, will you state your full name for the record, please?

A Charles R. Davis.

Q You are employed by what company?

A Skelly Oil Company.

Q In what capacity?

A Unitization Engineer in the Joint Operation Section.

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Q In Tulsa, Oklahoma?

A Yes, sir.

Q As such, you have testified before this Commission on previous occasions, have you not?

A Yes, sir.

Q Have your qualifications as an expert in this field been recognized by the Commission?

A Yes, sir.

MR. JACOBS: We ask that his qualifications be so recognized at this time.

MR. UTZ: They will be.

Q (By Mr. Jacobs) Mr. Davis, are you familiar with the application of Skelly Oil Company in this case for approval of the Unit Agreement?

A Yes, I am.

MR. JACOBS: Attached to that application was a copy of the Unit Agreement, and it was marked as Exhibit A to the application. We ask that a copy of this now be marked for identification.

(Whereupon, Applicant's Exhibit A marked for identification.)

Q (By Mr. Jacobs) Mr. Davis, this Unit Agreement did accompany the application in this case, did it not?

A Yes, sir.

Q And you are familiar with this Agreement and its contents?



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A Yes, I am.

Q What does this cover, briefly?

A This is a Unit Agreement which provides for the development and operation of the West Dollarhide Queen Sand Unit, which comprises approximately 2563 acres, more or less, of State, Federal and fee lands in Townships 24 and 25 South, Range 38 East, Lea County, New Mexico. It is the purpose of this Agreement to enable institution and conservation of a secondary recovery operation, conserve natural resources and prevent waste and secure the other benefits obtainable through development and operation of the area subject to this Agreement under its terms, limits and agreements set forth therein.

Q I notice on the Unit Agreement we have called it the West Dollarhide Queen. In truth and fact, the Commission carries the particular wells in this Unit area as the Dollarhide Queen. Would you please explain the reason for this difference?

A This is for the simple reason that in the adjoining State of Texas there are other Dollarhide Queen reservoirs, and for ease in accounting on our part, we have named this West Dollarhide to identify it from those others.

Q This Unit Agreement is the normal type of Unit Agreement involving Federal, State, and fee lands?

A Yes, it is.

Q What is the status of the sign-up on this Unit Agreement?



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A As of this time we have approximately 81 percent of the working interest, and in excess of 89 percent of the royalty which has indicated that they will commit their interest to this Unit.

Q This Agreement has been submitted to the State Land Office and the U.S.G.S. for approval, is that correct?

A Yes, sir.

Q And preliminary approval has been obtained?

A From both, yes.

MR. JACOBS: I believe that's all we have of this witness. We ask that the application and the corresponding Exhibit A attached thereto be admitted into evidence and made a part of the record.

MR. UTZ: Without objection it will be entered into the record.

(Whereupon, Applicant's Exhibit No. A admitted in evidence.)

MR. JACOBS: You may cross examine Mr. Davis.

MR. UTZ: Any questions of the witness? The witness may be excused.

(Witness excused.)

CHARLES J. LOVE

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

DIRECT EXAMINATION

BY MR. JACOBS:



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Q Will you state your name for the record, please?

A Charles J. Love.

Q Mr. Love, by whom are you employed?

A Skelly Oil Company.

Q In what capacity?

A District Petroleum Engineer located in Hobbs, New Mexico.

Q Mr. Love, have you testified before the Oil Conservation Commission as an expert?

A Yes, sir, I have.

Q Were your qualifications accepted at that time?

A Yes, sir.

MR. JACOBS: We ask that his qualifications be recognized.

MR. UTZ: Yes, sir, he has previously qualified.

Q (By Mr. Jacobs) Mr. Love, are you familiar with the application in Case No. 2673?

A Yes, sir, I am.

Q And marked and attached to the application was an Exhibit A, was it not?

A Yes, sir.

Q What is that exhibit?

A It is a study, a secondary recovery study proposed by the West Dollarhide Engineering Subcommittee to study the feasibility of secondary recovery operations in the Dollarhide Queen



reservoir.

(Whereupon, Applicant's Exhibit No. B marked for identification.)

Q (By Mr. Jacobs) This exhibit now has been marked for identification as Exhibit B. Just briefly, without going into detail, what was the general outline of this exhibit?

A Well, the object of this report was to determine the feasibility of conducting secondary recovery operations in the Queen reservoir. This study concluded that it was feasible, that additional oil could be recovered by injecting water into the Queen sand. The report recommends that injection operations begin. The report further contains a history of the Dollarhide Queen Field, gives the recovery by primary operations and the expected or anticipated recovery by secondary.

It also contains the appropriate maps and the predicted, charts or graphs showing the predicted performance by primary and by secondary recovery.

Q What type of an injection program is anticipated?

A We will inject water into the Queen reservoir through 28 injection wells. They will be converted for injection purposes. We will inject water under a packer into the Queen sand.

Q The source of this water initially will be what?

A Will be Santa Rosa Water.

Q The volume you anticipate into each well?

A The Engineering Subcommittee felt that the initial injection rates would be 500 barrels per day per injection well, or

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a total of about 14,000 barrels of water through the 28 wells that will be converted.

Q What is the anticipated maximum pressure at the wellhead?

A The Engineering Subcommittee in their initial design work carried the design of their equipment to a maximum pressure of 2,000 pounds after reservoir fill-up.

Q Are the proposed injection wells indicated on a map contained in this report?

A Yes, sir, they are.

Q That is Figure --

A Figure 8.

Q -- Figure 8 of Exhibit B, is that correct?

A Yes, sir.

Q You have also prepared another exhibit which lists the proposed wells and their casing cementing program, et cetera?

A Yes, sir.

MR. JACOBS: We ask that be marked for identification as Exhibit C.

(Whereupon, Applicant's Exhibit C marked for identification.)

Q (By Mr. Jacobs) Does this exhibit list the 28 wells that are proposed for injection?

A Yes, sir, it does.

Q It gives the location of each well?

A Yes, sir. The total depth, the completion interval, the size and depth of surface casing that was set, the sacks of



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cement. Then it shows the intermediate strings and the production casing, the size, the depth, and the sacks of cement used.

Q Most of the wells proposed are open hole type completion, is that correct?

A Yes, sir, most of them are, 23 of those wells listed are open hole. There are five that will be injecting through perforations.

Q You anticipate setting a packer above the Queen sand and injecting the water through tubing into the Queen formation?

A Yes, sir.

Q You feel that this will protect all the fresh water sands or any other sands that may be present in the area?

A Yes, sir, we do.

Q Will you run coupon tests and/or coat the tubing if necessary?

A Yes, sir, we will. We will either internally line or plasti-coat the tubing or run coupon checks and check them weekly or as often as is deemed necessary from the results of the initial analysis from the coupon tests.

MR. JACOBS: I have now what we request be marked as Exhibit D. It has eleven parts to it.

(Whereupon, Applicant's Exhibit No. D marked for identification.)

Q (By Mr. Jacobs) These are the eleven wells in which we have logs available, is that correct?

A Yes, sir. There were eleven wells upon which we did



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have logs. Eleven of the injection wells.

Q For the record, will you please list or name those wells on which we have the logs?

A Yes, sir. L. E. Elliott, Operator, their Elliott Federal No. 3-H; Elliott and Hall, Operator, Elliott Federal Well No. 3-S; J. P. Gibbon, Operator, the Fowler Hare Well No. 2; Gulf Oil Corporation, their Leonard G. Well No. 17; Pan American, their State "Y" Well 13 and State "Y" 14; Skelly Oil Company, Mexico "J" 11, Mexico "K" 3, Mexico "L" 6, Mexico "O" 1; Texaco, their McGee Well No. 2.

(Whereupon, Applicant's Exhibit No. E marked for identification.)

Q I hand you what has been marked for identification as Skelly Exhibit E and ask that you state what it is, please.

A Our Exhibit E is a map of the West Dollarhide Queen Sand Unit area, the Unit area being outlined with a hashed line. The Unit is located in a portion of Township 24 South and 25 South, Ranges 37 and 38 East. Also shown on the map, to the best of our knowledge, are all known Queen wells in this area.

Q Does this map also show the lessees --

A Yes, sir, it does.

Q -- within a two-mile radius of all proposed injection wells?

A Yes, sir.

Q I notice that there are wells indicated to the north primarily in Section 19, I believe, it looks like one in Section



18.

A Yes.

Q It's not within the Unit area. Are these wells in the Dollarhide Queen formation?

A They are in the Dollarhide Queen Pool. It is my understanding that the operators of those wells did not want them included within this Unit; and in my opinion, I don't think their exclusion from the Unit will in any way harm our proposed operations for the West Dollarhide Queen Unit.

Q In fact, most of these wells are dually completed in some other sand, are they not?

A Yes, sir, they are.

Q What is the average production of the wells within the proposed Unit area?

A The average daily production for the month of August from the wells within the Unit area was 2.8 barrels per well.

Q What is the range, that is, the highest and the lowest?

A There is one well producing six barrels a day, and the lowest range, a half barrel a day.

Q Mr. Love, it is your opinion, is it not, that this is in the nature of a salvage type operation?

A Yes, sir, it is.

Q And you are requesting a permit to waterflood, and under the provisions of Rule 701 of the Commission?

A Yes, sir.

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MR. JACOBS: I believe that's all we have of this witness. We ask that Exhibits B through E inclusive be admitted into evidence, and the application be made a part of the record.

MR. UTZ: Without objection, Exhibits B through E will be included as a part of this record.

(Whereupon, Applicant's Exhibits B through E, inclusive, admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q All the wells listed on Exhibit C will be proposed injection wells?

A Yes, sir.

Q All such wells will have injection through tubing with packer set above the Queen?

A Yes, sir.

Q Is this proposed to be a waterflood or a secondary recovery project?

A Secondary recovery project.

Q Therefore each well's allowable will stand on its own?

A Yes.

MR. UTZ: Are there any other questions of the witness? The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements in this case?

MR. BUELL: Guy Buell, for Pan American Petroleum

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Corporation. It is our opinion that this is a significant conservation effort, and for that reason we would urge that the Commission approve the two Skelly applications that Skelly has requested.

MR. UTZ: Any other statements?

MR. SELINGER: I believe the Applicant asked that the allowables be fixed in accordance with Rule 701.

MR. UTZ: I don't understand that. If it is a secondary recovery project, it wouldn't be true. There is a distinction as to waterfloods and secondary recovery.

MR. SELINGER: In view of the fact that all of the wells are sub-marginal wells and not capable of making the top, it is naturally assumed by the operator that all wells will be permitted to have a maximum allowable of the top unit, whatever it might be for that current period. Is that correct?

MR. UTZ: Under Rule 701, you mean?

MR. SELINGER: Under any normal situation.

MR. UTZ: Certainly the secondary recovery project is to receive the normal unit allowable.

MR. SELINGER: Even under a waterflood project, would not the transfer of allowable from the injection wells be permitted, to the producing wells?

MR. UTZ: Yes. As a waterflood, it would.

MR. SELINGER: As a waterflood?

MR. UTZ: Yes.



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MR. SELINGER: Each well would be entitled to produce up to the maximum top allowable?

MR. UTZ: Yes. The 42 barrels a day, as a waterflood.

MR. JACOBS: May I call Mr. Love back to the stand to clarify this?

MR. UTZ: Yes.

CHARLES J. LOVE

recalled as a witness, testified further as follows:

REDIRECT EXAMINATION

BY MR. JACOBS:

Q These wells are a stripper type operation?

A Yes.

Q When you said secondary recovery, you used the term secondary recovery and waterflood synonymously, didn't you?

A Yes, I did.

Q In your opinion, is this in truth and fact a waterflood type operation?

A Under the 701, it would be.

Q And you are requesting that a project area under Rule 701 be established, 42 barrels times the number of units within the project area with the rest of the rules provided for in Rule 701.

A Yes.

MR. UTZ: In your opinion, the producing capability of these wells would qualify them as a waterflood or stripper stage?



A Yes. The average production is 2.8 or less than three barrels per well.

MR. UTZ: Any other questions? The witness may be excused again.

(Witness excused.)

MR. UTZ: Any other statements in this case? The case will be taken under advisement. The hearing is adjourned until 1:30.

(Whereupon, the hearing was recessed until 1:30 o'clock P.M.)

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