DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 7, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Newmont Oil Company for approval of a development plan for the Loco Hills Waterflood Project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a plan of development for the Loco Hills Waterflood Project, Eddy County, New Mexico, which would permit the conversion of wells to water injection by stages. The applicant proposes to operate said waterflood project under the terms and conditions of Order No. R-2178 which established a buffer zone in a portion of the project area. Case 2578

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will call Case 2578.

(Whereupon, Newmont's Exhibit No. 1 was marked for identification.)

MR. CAMPBELL: Jack M. Campbell, Campbell & Russell, Roswell, New Mexico, appearing on behalf of the applicant.

MR. MORRIS: Application of Newmont Oil Company for approval of a development plan for the Loco Hills Waterflood Project, Eddy County, New Mexico.

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

MR. CAMPBELL: Mr. Examiner, before proceeding, I would like to ask that the record in Case No. 2472, which is the case in which the unit was authorized, and the record in Case 2473, which is the case in which the original Order No. R-2178 was entered, be incorporated by reference as a part of this case.

MR. NUTTER: Is there objection to the incorporation of the records in Cases 2472 and 2473 into the record of Case 2578? If there's no objection, these records will be incorporated by reference.

MR. CAMPBELL: I would, Mr. Examiner, like to call the attention of the Commission to the fact that in the original application presented to the Commission there was an omission in Section 3-B, or Stage 1, and I have corrected that by a letter to the Commission which I would like to have included as a part of the original application. The acreage, as evidenced upon the plats attached to the original application, is correct, but there was an error omission in the typing.

FRANK DARDEN

called as a witness, having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Frank Darden.

Q Where do you live? A Fort Worth, Texas.

Q By whom are you employed and in what capacity?

A Newmont Oil Company as Manager of Operations.

Q Have you previously testified before the Commission or its Examiners?

A I have.

MR. CAMPBELL: Are the witness's qualifications acceptable?

MR. NUTTER: Yes, sir.

Q (By Mr. Campbell) Did you also participate in the hearings in Cases No. 2472 and 2473 involving the Loco Hills and Loco Hills Unit?

A I did.

Q Mr. Darden, are you acquainted with this particular application now pending before the Commission in this case?

A Yes, sir.

Q I refer you to what has been identified as Applicant's Exhibit No. 1 and ask you if you will refer to that where necessary and advise the Examiner as to what you are proposing relative to this case?

A We are proposing to develop the West Loco Hills Unit in six stages, including the buffer zone which was granted under the

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

Commission's order governing the allowable on this project, with the kick-off date for the buffer zone to be as soon as the unit can be formed and put into operation, with the Stage No. 1 outside the buffer zone being put under development on January 1st, 1963, Stage No. 2 to be put under development July 1st of 1963, Stage No. 3 developed effective January 1st, 1964, Stage No. 4 to be developed July 1st, 1964, and Stage No. 5 to be developed January 1st, 1965. It is believed that by this stage development it will be possible for this unit to be developed under Rule 701, with a minimum of waste.

Q Have you made calculations, Mr. Darden, with regard to the amount of allowable in each stage within the limits of Rule 701-E of the Commission and Order R-2178?

A I have.

Q Will you put those in the record, please?

A We calculate that Stage 1 will earn 1694 barrels per day, and that when Stage 2 is developed, the total unit allowable outside the buffer zone will freeze to 2436 barrels per day; when Stage 3 is developed the unit will earn a total allowable outside the buffer zone of ~~326~~ 3206 barrels per day; when Stage 4 is developed the unit allowable outside the buffer zone will be increased to 3794 barrels per day; and when development is completed with Stage 5, the unit will have earned a total allowable

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

outside the buffer zone of 3920 barrels per day.

Q Do you believe that if you are permitted to develop this project by stages, as you have requested, that the flexibility which results will enable you to operate the project more efficiently and, therefore, recover a greater amount of oil by secondary methods?

A Than what?

Q Than if you were required to develop it on the basis, the strict basis of each well or each tract at a time.

A Yes, I do feel definitely that if we're permitted to develop by stages we will minimize the unbalanced condition which would be caused by developing individual wells.

MR. CAMPBELL: I would like to offer Exhibit No. 1 in evidence in this case. That's all the questions I have at this time.

MR. NUTTER: Newmont's Exhibit No. 1 will be admitted in evidence.

(Whereupon, Newmont's Exhibit No. 1 was admitted in evidence.)

MR. NUTTER: Are there any questions of Mr. Darden?

MR. MORRIS: Yes, sir, I have a question.

MR. NUTTER: Mr. Morris.

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Darden, as I understand your application, the various stages that you have proposed here will substantially allow you to produce the same allowable as you would be allowed to produce under Rule 701 as it pertains to putting on injection wells at the time you receive substantial response, and so forth?

A That's right.

Q And that this proposed plan will merely allow you to project with certainty the exact amount of allowable that you can expect at different points in the future?

A That's right. And in that regard it will considerably aid Newmont, as operator of this unit, in its plan of development and its balancing of the flood by stages by knowing what our allowable will be at a future date.

Q Mr. Darden, let's take a typical stage here. Let's take Stage 1, now, the wells that will be producing wells in Stage 1, will they still be producing oil in substantial quantities at the time you put Stage 4 and Stage 5 into operation?

A Well, they will, yes, they will be producing substantial quantities. But by the time Stage 4, for example, the producing wells in Stage 4 begin responding and start producing any large quantities of oil, why then Stage 1 wells should have declined

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

to where we can stay within this allowable without too much difficulty.

Q Would it be your idea of the way that this project will work under your proposal that at the time you might be putting Stage 4 and Stage 5 wells on production, that you might be taking the allowables assigned to wells back in Stage 1 and transferring some of that allowable over here to wells in Stage 4 and 5?

A I'm not sure that I understand your question.

Q In other words, you have got a unitized operation here and you have the free transfer of allowable among wells, would you contemplate transferring the allowables from some of the wells in Stage 1 over to the wells in Stage 4 and Stage 5 at the time you were entitled to put that stage on production?

A No, I don't think we would when we put that stage on production, now it's possible that some time during the life of that unit it would be necessary to transfer some allowables.

Q In other words, if you transferred, let's say all of the allowable from Stage 1 to Stage 4 at the time you were entitled to put Stage 4 on production, it would, in effect, give you capacity allowables in Stage 4, or substantially that, would it not?

A No, I don't think that we are even approaching capacity allowable treatment under this plan. If you mean that in one well

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

we might be able to produce what that well will make, that's correct.

Q I'm not really referring to one particular well, I'm referring to all the wells --

A Well, certainly we will not transfer blanket allowable from Stage 1 to Stage 4. I don't anticipate ever doing it that way. Now, there may be an occasional well where it will require a transfer from other parts of the developed area.

Q But you are not proposing by your application here any restriction upon the free transfer of allowables between wells in the different stages, are you? Do you follow me? You are not proposing any restriction on the transfer of allowables from wells in Stage 1 to Stage 4?

A No. I didn't realize that there was any restriction. If there is, I would like to know it. In Rule 701, once you have developed your flood, I thought you had a right to transfer allowables.

Q I'm not intimating that there is.

MR. NUTTER: I would like to clarify one thing, I believe, Mr. Morris, that these stages represent only the areas that the well would be put on injection at a certain date. They don't necessarily reflect the project area at all. The project area for Stage 1, when it's put on injection, would overlap

into Stage 2. The project area would be calculated and computed in accordance with Rule 701, and there would be free transfer of allowable within the project area.

MR. MORRIS: I see. But the project area, as the flood continues to the west, would at all times include wells, say back in Stage 1, which might be making very little oil at that time?

MR. NUTTER: As long as the injection program is still going on back in Stage 1, the project area, while Stage 2 is being injected, would include the buffer zone, Stage 1, Stage 2, and a portion of Stage 3.

MR. MORRIS: I see.

Q (By Mr. Morris) Mr. Darden, will your proposal have a salutary effect upon the unitization of this entire area?

A I think it will have more than a salutary effect. I think it is essential that in order for the unit to be formed, for the operators concerned to know the basis upon which development can be carried forward. Since Newmont as an operator can recommend this stage development as a method for protecting the unit's interest in this matter, I think it is essential that we have an order which will permit us to develop in this manner.

Q Have any of the holders of interest within the unit area expressed any opposition to this method of development?

A No, sir.

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

MR. MORRIS: That's all I have.

BY MR. NUTTER:

Q You said that the buffer zone would be put on injection as soon as the unit is signed, approved and operative. When do you anticipate that will be?

A Well, that's a hard thing to say positively. We are shooting for September the 1st. However, I'm afraid that's going to be optimistic, because it's necessary to get the unit agreement approved as to form by the Roswell office of the United States Geological Survey, and then it must be sent to Washington for approval there. While we're going to do everything in our power to expedite these approvals, it's pretty hard to predict when we will get them. So, it is possible that Stage 1 and the buffer zone might be put on simultaneously, and I hope that we are ready by then.

Q The dates in which wells would be put on would be in the six-months' period starting with the date for each of these stages?

A Yes, sir.

Q Some time within the following six months?

A That's right.

Q But not before that date?

A No. We would not put them on, however, we would

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243 6691

probably do our planning so that we could put them on early in the six months in which we had approval too.

Q The diagram here does represent, as far as you know at this time, the actual location of the injection wells, the pattern?

A Yes, sir.

MR. NUTTER: Any further questions of Mr. Darden? Mr. Irby.

BY MR. IRBY:

Q I'm not, my memory isn't very good on these two transcripts that were referred to, was the casing program of the injection wells brought out in the order resulting from those two hearings?

A I'm not certain.

MR. MORRIS: Just one moment, I'll look at the order.

Q Maybe with a more direct question I could get the answer. What will be the casing program on these injection wells?

A Well, we will plan to have the same procedure which Newmont has followed in its development of the Loco Hills Flood, and that is, that where we use old wells we will test the casing to be certain that there can be no loss of injection fluid anywhere except into the pay zone. In cases where we find that there might be a casing leak, why we run tubing on a packer to insure

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

that water goes only into the Loco Hills sand. On new wells, on our injection wells, we are setting pipe to the top of the Loco Hills sand and cementing with 100 sacks of cement and using scratchers and centralizers to make sure we have no communication behind the pipe to upper horizons.

Q One more question, in the event you inject directly through the casing and you run this test prior to putting the well on injection, is there a provision for periodic tests after that date?

A No, sir. There are no periodic tests. Of course, as a routine matter in our operations we keep a close scrutiny on all injection wells and any radical change in the injection performance of a well indicates that something has happened, and we get on that quickly and run a, usually either run packer tests or in some cases run temperature logs, whatever it is necessary to determine why there would be any change, so that if there should be a casing leak we will find it very shortly and remedy it.

Q Now, there's only one thing bothers me, and that's your use of the word "radical change." I'm not sure that your definition and my definition of radical would be the same. The way I think of it, I don't believe you mean radical.

A Well, let me give you an example.

DEARNLEY-MEIER REPORTING SERVICE, Inc.
FARMINGTON, N. M.
PHONE 325-1182
ALBUQUERQUE, N. M.
PHONE 243-6691

Q Good.

A For example, a well has been taking 500 barrels of water per day at 1200 pounds pressure, then we notice the next week that the well has taken 800 barrels or 750 barrels, in a waterflood, normally the trend is for the water injection to decline and any time we have an increase without us having done something to the well, it indicates possibly that the water is going somewhere that it shouldn't go, those are the signs we look for.

Now, for us a radical change would be in the neighborhood of maybe a hundred barrels a day. Of course, it has to be within the accuracy of the meter, and that you also have to check because these positive displacement meters get out of adjustment pretty easily, and that's the first thing we check, and then when we're sure that that is right and it still shows an increase in the injection without us having done anything to the well, why we then go into the well and check it to be certain that it's going the right place.

MR. IRBY: Thank you. That's all I have.

MR. NUTTER: Any further questions? The witness may be excused.

(Witness excused.)

MR. NUTTER: Did you have anything further, Mr. Campbell?

MR. CAMPBELL: No, sir.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2578? We will take the case under advisement.

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 21st day of June, 1962.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2578, heard by me on June 7, 1962.

, Examiner
New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.
ALBUQUERQUE, N. M.
PHONE 243 6691
FARMINGTON, N. M.
PHONE 325-1182