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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 25, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Sinclair Oil & Gas  
Company for a waterflood expansion,  
Eddy County, New Mexico.

Case No. 3299

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING



MR. NUTTER: We will call next Case 3299, which is the application of Sinclair Oil and Gas Company for a waterflood expansion, Eddy County, New Mexico.

MR. KELLY: Booker Kelly of Gilbert, White, Koch and Kelly on behalf of the applicant. I wonder if we could have a minute with Mr. Irby, it might save a little time before we start.

(Whereupon, a recess was taken.)

MR. KELLY: I have one witness and ask that he be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 3 were marked for identification.)

DOUGLAS CUNNINGHAM

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

DIRECT EXAMINATION

BY MR. KELLY:

Q State your name, position and employer, please.

A My name is Douglas Cunningham. I work for Sinclair Oil and Gas in their West Texas region in Midland, Texas.

Q You are the witness that testified at the two previous hearings in this case that resulted in Order R-2268 and 2268-A?

A Yes, I am.

MR. KELLY: Are the witness's qualifications a matter of record?

MR. NUTTER: They are.

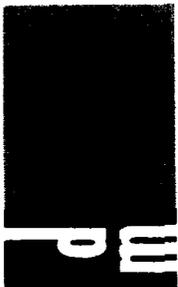
Q Would you briefly state what Sinclair seeks by this application?

A Sinclair is asking an exception to Order No. R-2268-A to permit us to go ahead with the injection into wells in Stage IV before we have completed Stage III.

Q Now, referring to what we have marked Exhibit No. 1, would you give the Examiner a brief history of this waterflood project?

A Yes. Exhibit 1 is the same picture that we presented in the case which resulted in Order R-2268-A wherein we requested authority to be allowed to expand this flood in four stages. This picture is presented just for our convenience to keep from having to dig back through the records and find the other picture.

We showed that our first expansion would be the wells designated with a red symbol in the legend shown to have occurred in the second half of 1963. Then the green was to occur in the first half of '64 and would have been the second stage of expansion. The gold was to occur in the second half of 1964 and be the third expansion, and the blue would have been



the last expansion and was to have occurred in 1965.

Q This Exhibit 1 is the identical exhibit that was introduced in the case that resulted in Order R-2268-A, is that correct?

A That's right.

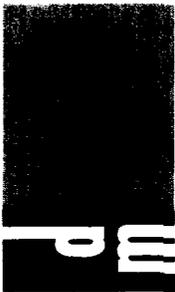
Q And at that time was Sinclair expecting to be restricted to completion of one phase before it started another?

A Well, no, sir, we didn't actually anticipate that. What we thought would probably happen was that we would be allowed to, say, go to Stage I during 1963 and then possibly if we were ready to go to Stage II in 1964, but still had not finished Stage III, we thought we might be allowed to go ahead with certain wells on Stage IV before completing Stage III.

However, the order that was written was restrictive in that we had to have completed one stage before we could go to another stage, and that stage had to be not before a certain date.

Q Now, referring to Exhibit No. 2, would you show the Commission what the stage development is now?

A Yes. Exhibit 2 is essentially the same map but it shows the development to the present time. You see the wells with the black circles and the black lines designating the patterns there indicate the present development to August of 1965. This is the stage of development that we're at right



now in our flood and then the gold are the remaining Stage III wells that we have not completed yet, and the blue are the same wells that are shown in blue on Exhibit 1. They are the wells that are in Stage IV.

Q So under the order as it now stands you would have to complete the wells marked gold before you could begin the blue?

A That is correct.

Q What is it that Sinclair specifically seeks to do if this application is granted?

A Well, I might say that the royalty out here is essentially owned by the federal government and we had to have the United States Geological Survey's approval to flood this thing. They told us in a letter that they would approve our flood provided we proceeded under the New Mexico Commission's orders, but they further said that before we converted any lease line wells to injection we must have cooperative injection agreements with offsetting operators and compensating injection wells from these offsetting operators, so that no correlative rights would be impaired.

We have been in touch with the offset operators there to the south of Section 7 and Section 8, these being the Franklin, Aston and Fair, Sunray DX Oil Company, and then to the west there, Nash, Windfor and Brown. Now we have had replies

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from Sunray and Franklin, Aston and Fair indicating that they were ready to cooperate with Sinclair if Sinclair would furnish them pressured water.

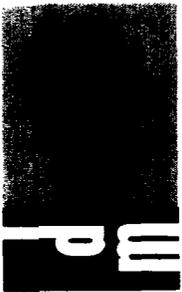
Now, we have laid a water supply line from up on the caprock approximately fifteen miles away to provide water for our Keel-West Flood here and we have an adequate water supply to furnish these people water, but it's our understanding that we have to go back to the State Engineer's office and get permission from them to use our water on somebody else's property other than what we have already got approval for, see. So we are now wishing to expand our flood to at least Wells No. 21 and 22 on the Keel OB which are in Sections 5 and 6 there which are interior wells and are not wells that are on the lease line here.

The way the order is written right now we would not proceed with the injection into 21 and 22 until we have finished the wells shown in gold here, which is Stage III, and we can't do that right now because we have some administrative procedures we must go through before we are allowed to do that.

We don't anticipate any difficulties in getting the administrative procedures finished, but it will be a time delay, but if we could convert 21 and 22 now, we believe that we would have a much more efficient sweep from these two wells and would possibly help prevent waste.

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Q You say you have had response from Sunray and Franklin, Aston and Fair and there hasn't been any indication that you are going to have any problem working out an agreement?

A No, sir. We haven't had an answer from Nash, Windfor and Brown, and, of course, we'll have to have some reply from them before we can convert Well 7 and Well 14 in Section 7 of the Keel.

MR. NUTTER: Would those be the leases identified as Nash, et al.?

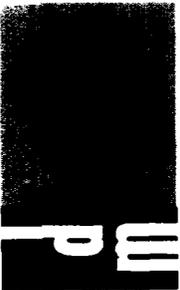
A Yes, sir. It's my understanding that the reason these people haven't moved is that one of the partnership is now deceased and the estate is in the process of being settled, so they can't move at this time.

Q (By Mr. Kelly) So the basic reason for this application is to allow you to continue your flood project with the wells that are in the interior of the lease?

A Yes, sir, and we can conceive that possibly we may work out the negotiated compensating injection wells with the owners to the east here of our Keel-West project area before possibly we get like agreements with the people on the south, so we thought, well, maybe we could just go and ask the Commission if we could now at this time combine, say, Stage III and Stage IV and proceed with converting any wells, if, as and when we straighten out our administrative problems here.

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Q In your opinion would it promote the more efficient reservoir sweep if you were able to go ahead with 21 and 22 in Sections 6 and 5 at this time rather than having to hold up?

A Yes, in my opinion it would.

Q Therefore, the granting of this application, in your opinion, would not affect correlative rights and would prevent waste?

A That is true.

Q Do you have an exhibit prepared showing the cumulative production of this field since you started your injection?

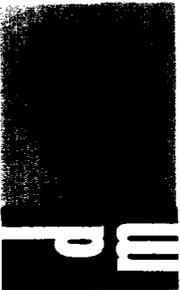
A Mr. Kelly, this is the performance curve. It doesn't have cumulative oil on it, but it has three curves, the water injection rate in thousands of barrels per month. This is the curve shown at the top of Exhibit 3. It has the water and oil production. These are the lower two curves, and these are in barrels, thousands of barrels per month.

Now, I have several scale changes on here and I would just like to kind of go through the way this curve should be read. Starting with the water injection curve at the top of the page, you can see that injection began in September of 1962. In general we had an increase in injection volumes. Then in November of 1964 you can see that the curve starts to be colored green and then the curve terminates in November.

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Then you have to go to the next scale to the left on the water injection and then start back down in December of 1964 and read approximately 300,000 barrels of injection. This is the green curve, and then the green curve is carried throughout until June, 1965, and that green curve is a change in scale on the water injection graph.

Then we have kind of a similar situation in the water production. The water production curve, of course, starts at the left index of the graph and in about January or February of 1963 we see a sudden increase in water and then the water has kept increasing, and then we see in January of 1965 the water production curve has a change in scale, and this is the blue curve then.

Then to read the February through June, 1965 water production you have to drop over to the second scale on the oil and water production, and in February read approximately 21,000 barrels, and then in June approximately 36,000 barrels.

Likewise on the oil curve, the oil curve starts at the left index of the graph and then in about March or April we see a sudden increase in oil production going up to about 12,000 plus barrels at about the first of 1964. Then we have a decrease in oil production, and in July or August of 1964 the curve starts becoming colored red, and then we carry the red curve for oil production. That curve stays on the same

scale as it originally started, so when we see the June, 1965 oil production we read that it's in excess of 15,000 barrels for that month.

Q In the eight sections that are involved in this flood, what was the average well production when you started?

A Approximately four to four and a half barrels per day.

Q Including your injection wells, what would be your average now?

A Slightly over nine barrels a day.

Q Actually how many wells are you producing out of at this time?

A At this time the actual number of the producing wells included in the project area is thirty-five.

Q Would you say that this project has generally reached the expectations that you would hope for when you started?

A More or less. We definitely have had a response to water injection. We predicted originally that there would be somewhere in the neighborhood of 70,000 barrels per five spot. Actually our production performance has shown that some of the five spots have produced in excess of 70,000 barrels and some have not produced quite 70,000 barrels, so over-all I would say that we are having a fair response.

Q Were Exhibits 1 through 3 prepared by you or under your supervision?

A Yes.

MR. KELLY: I move the introduction of Exhibits 1 through 3.

MR. NUTTER: Sinclair's Exhibits 1 through 3 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 3 were offered and admitted in evidence.)

MR. KELLY: We have no further testimony at this time.

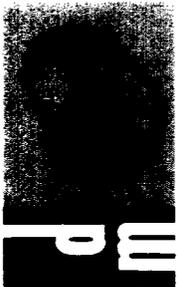
MR. NUTTER: Are there any questions of Mr. Cunningham?

MR. IRBY: Yes.

MR. NUTTER: Mr. Irby.

MR. IRBY: Frank Irby, State Engineer's office. Part of Mr. Cunningham's testimony has brought out a point that I didn't realize from the application and the advertisement would be a part of this hearing and that's my reason for going into questioning.

I would like to state to start with that my off-record comments prior to the opening of the record have no meaning whatever with regard to the application of Sinclair for the use of water they have appropriated outside of the area



designated in the original application to the State Engineer. This application will be acted on by the State Engineer in routine order and I would like to ask a question or two of the witness, if I may, concerning the use of water on the Franklin, Aston and Fair lease, and any other lease that might become involved in the use of this water supply.

MR. KELLY: We have no objection. However, as far as this hearing is concerned, it's strictly in the eight sections that were already approved. It's just a change of sequence. As our witness brought out, it really has nothing to do with these extra outside areas and that will certainly be handled by your office. We don't expect that it would be treated in any manner except in the usual manner, but we have no objection to any questions. It might be outside the scope of this application.

MR. IRBY: I feel that it definitely is outside the scope of this hearing and I would be glad to discuss it with Mr. Cunningham after the hearing is over if you would prefer this, Mr. Kelly.

MR. KELLY: If it's okay with you, we would prefer it that way.

MR. IRBY: Thank you. I have nothing further.

CROSS EXAMINATION

BY MR. NUTTER:

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Q As I see it, Order 2268-A authorized expansion of this project in four stages and then it put a requirement on that one stage must be completed before the subsequent stage is commenced?

A Yes, sir.

Q There's nothing wrong with the way the order is written except for the clause that requires that one stage be completed before the next is commenced?

A That's the way we feel about it. I wouldn't say anything is wrong about it.

Q I say as far as your operation right now is concerned, delete that requirement?

A If that requirement is struck we could have proceeded.

Q As far as the time table is concerned, all four stages are eligible, because we are in the year 1965 now?

A Yes.

Q So simple deletion of that part of the order will take care of Sinclair's request at this time?

A Yes.

Q And the wells would continue to be converted and constructed and utilized as injection wells in accordance with the original diagrammatic sketches presented at the first hearing?

A That's right.

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MR. NUTTER: Any further questions of Mr. Cunningham? He may be excused.

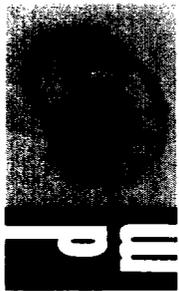
(Witness excused.)

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

MR. KELLY: No.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3299? We will take the case under advisement and call a fifteen-minute recess.





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I N D E X

<u>WITNESS</u>		<u>PAGE</u>
DOUGLAS CUNNINGHAM		
Direct Examination by Mr. Kelly		2
Cross Examination by Mr. Nutter		12
<u>EXHIBIT</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Applicant's 1 through 3	2	11

