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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
January 22, 1969

EXAMINER HEARING

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IN THE MATTER OF: )

Application of General American Oil )  
Company for a waterflood expansion, )  
Eddy County, New Mexico. )  
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Case No. 4029

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4029.

MR. HATCH: Case 4029, application of General American Oil Company for a waterflood expansion, Eddy County, New Mexico.

MR. RUSSELL: John F. Russell, Roswell, New Mexico, representing the applicant, and I have one witness, Mr. Crow.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Numbers 1 through 6, inclusive, were marked for identification.)

ROY CROW

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

DIRECT EXAMINATION

BY MR. RUSSELL:

MR. UTZ: Any other appearances? You may proceed.

Q Please state your name, address, and the name of your employer, and the capacity in which you are employed.

A My name is Roy Crow. I am employed by General American Oil Company of Texas as Assistant Superintendent, and I reside in Artesia, New Mexico.

Q And you have previously qualified to give testimony before the Examiner and the Commission?

A I have.

Q Are you familiar with the application in Case No. 4029?

A I am.

Q What do you seek by that application?

A We seek to expand our present pilot flood in the Grayburg-Jackson and San Andres Flood in three stages. Do you want me to describe this now?

Q Is that an expansion of the flood authorized by Order No. 2324 of the Commission?

A That's correct.

Q Now, in connection with this application, have you prepared some exhibits?

A I have.

Q Referring you to what has been marked as Exhibit 1, will you explain what that represents?

A Exhibit 1 is a plat showing the proposed injection wells within a radius of two miles, showing the zones in which all wells are producing. As will be noted, there are four colored on the map. The three wells in blue indicate the current three approved pilot injection wells. The wells colored in yellow are our proposed first-stage expansion. The ones in brown are our second-stage expansion, and the ones colored in green are the third-stage expansion. The red outline indicates the outline of the project area.

Q Will you state the acreage that is to be included

within the three stages, and the pilot.

A Well, there are 1,480 acres, which would be an additional 200 acres to what was asked in the application, due to an oversight on my part.

Referring to the application, under Township 17 South, Range 30 East, we requested the southeast quarter of the southwest quarter; and to that in Section 19, we would add the southwest quarter of the southwest quarter, and the southwest quarter of the southeast quarter, an additional 80 acres. And then in Section 30 of the same Range, addition to the northwest quarter, we have the northwest quarter of the northeast quarter, Well No. 3.

Q And that is the total of 1,480 acres?

A There are two others in Section -- Township 17 South, Range 29 East, in Section 24. In addition to the southeast quarter of the southeast quarter, we have the southwest quarter of the southeast quarter, and as --

MR. UTZ: Just a moment. Let me get this straight. Section 24, southeast southeast, and then what?

THE WITNESS: And you also have the southeast of the southwest already.

MR. UTZ: Yes.

THE WITNESS: And in addition to those two, we have

the southwest quarter of the southeast quarter, and the southwest quarter of the southwest quarter. These are all included within this red line, but on the map I first furnished Mr. Russell, these five 40's were omitted.

MR. HATCH: There are three wells on here that were not then in the original application?

MR. RUSSELL: No wells, just acreage.

MR. HATCH: It is advertised as 13 additional injection wells. Am I counting 16?

THE WITNESS: There are only 13 additional injection wells. These three in blue are already injection wells already approved.

MR. HATCH: I didn't count those.

THE WITNESS: The three circles that are not colored brown in stage two are Sinclair wells, which I have a letter to submit that these wells will be converted in their ultimate flood pattern to coop. As this progresses a little, you will see -- the reason this is in stages is due to the fact that Sinclair has not got an approval yet. And stage two will be put on at the time Sinclair gets their flood. And the three wells circled but not colored, those three are not General American wells.

MR. UTZ: Those are not in your application?

THE WITNESS: These are not in this order here. They are just showing the coop along the line there with Sinclair, which I was going to bring out at the time I described the three stages.

Q (By Mr. Russell) Mr. Crow, in addition to the acreage which you have just described, the application on page two incorrectly lists the Keely C No. 8 Well as being Range 39 East. That should be 29 East, should it not?

A That's correct.

Q You are asking that the application be amended to reflect that correct Range, and also the additional acreage which you have testified to?

A I do. Making a total of 1,480 acres instead of 1,280.

Q But there are no additional injection wells which are not included in the application?

A This is correct. This additional acreage was to correspond with the Commission's pattern of using all offsets and diagonal offsets, which I had not included these diagonal 40's to these injection wells on my first -- I had only used the direct offsets, and the five additional 40's were diagonal offsets to the injection well.

MR. RUSSELL: Do you concur in the amendment,

Mr. Examiner?

A I would like to discuss this plat just a little further to clarify the point that he brought out. The stage one colored in yellow, we would put this in immediately, with the exception, as you would note, of Well. No. 23 and State No. 2. These, we ask to be tentative at this time, since we have no affirmative agreement with Bassett on Well No. 8. We are working on this. And we would not convert these two wells in stage one, that is our Keeley C 23 and State No. 2, until we reached an agreement with Bassett, at which time we would furnish the Commission a copy of this agreement, or letter of this agreement before we converted these two wells.

We do want approval for them now, with the understanding that since we do not have an agreement with Bassett at this time, we would not convert these wells until we had submitted evidence that we have reached agreement with the Bassett property.

In the stage two, colored in dark brown, shows our Keely B 11, Keely C 16, and Keely C 21, and is colored solid on our maps. Those are the three General American wells; they would coop with the Sinclair Robinson No. 7, and Robinson No. 11, and No. 4, which are only circled on your map. And I will submit a letter from Sinclair showing that this will fit their ultimate

flood pattern, and that they do approve of our map and our plans here.

In stage three, colored in green, will be the conversion of three wells, Keely C 8, Burch B 10, and 11. This stage is merely to offset overriding royalties which General American has. We have overrides on our C leases, and none on the other leases. And by converting these additional wells as our third stage, we would balance our overriding royalty acreage, but we ask approval of all three stages at this time. We would put all three stages in now, if Sinclair was ready to go.

MR. UTZ: The corrections noted on your application will be approved.

Q Now, I will refer you to what has been marked as Applicant's Exhibit Number 2, which consists of 13 parts, and is marked Number 2 and then through 2-L, and ask you what that exhibit reflects.

A The 13 parts of Exhibit 2 are the schematic diagrams of the proposed 13 injection wells. I will not discuss each one individually, unless you have questions. They are all the same general type. They show the surface casing, the cement, the depths set, the production casing, cement depths set, the amount of open hole, the approximate depth of tubing, and packer,



that will be placed in each well, and that injection will be down plastic-lined tubing below a packer, and inhibited water will be placed in the annulus.

The only thing that varies greatly from one of these to the other is that there are five wells to be deepened prior to injection, and these are marked at the bottom of each log as to the approximate amount of footage that they will be deepened.

MR. RUSSELL: Mr. Examiner, would you want him to go through each of those and give the footage location of the wells which is shown there?

MR. UTZ: No, I don't think so.

MR. RUSSELL: It is on each one of them.

MR. UTZ: As long as you state that these footages are all correct.

THE WITNESS: These are correct.

MR. UTZ: I don't think that will be necessary.

Q (By Mr. Russell) Now, I refer you to what has been marked as Applicant's Exhibit Number 3, and ask you what that reflects?

A Exhibit Number 3 is a recap on all wells to be converted in the three stages. I believe I failed to maybe designate that stage one, at least on my copy, anyway, stages

two and three, the last pages of the stage three, and all but the last three wells on the second page were stage two -- I am sorry this is not marked a little better -- and the first seven wells are stage one. It is a recap of pertinent data on the wells to be converted, showing total depth, and production casings, the surface casings, the producing intervals, and the type of treatment that the wells originally had, and again the proposed deepening.

Q That is primarily in tabular form, the information shown on the prior exhibit, on the schematics, the individual schematic drawings?

A This is true, only including the stimulation treatments of the wells.

Q Referring you to what has been marked as Applicant's Exhibit Number 5, will you identify that?

A Exhibit 4?

Q Exhibit Number 4, rather.

A Exhibit Number 4 is a copy of the summary of operations for the period of 1968 through December of 1969, which was submitted as our plan of operation to the U.S.G.S., and it is submitted as their approval to this particular expanded project.

Q I refer you now to what has been marked as Applicant's Exhibit Number 5, and ask you what that is?

A Exhibit Number 5 is a portion of the only available log of the 13 wells to be converted to injection, and it shows the production casing, and the open-hole interval beneath. The small wiggly lines in the three places there are actually where supposedly three different pay zones are, as would indicate the log does not show up very much different in those places than it does anywhere else, so actually these logs are not really very informative, really, as to actually whether you are correlating in the same pay or not.

Q Now, Mr. Crow, what will be the source of water for this proposed flood?

A I would like to back up, we have one more exhibit.

Q All right. Referring to Exhibit Number 6, and tell us what that is.

A Exhibit Number 6 is a letter from Sinclair which states that they have no objections to our expanded flood, and that the three wells that I have shown on their Robinson Lease to be proposed injection wells will fit their ultimate flood pattern, in that our cooperation along with them will be as shown on our plat.

Q What is the source of water which you will use for this flood?

A We will recycle all produced water from the releases

involved in this flood, which will amount to about 80 barrels, plus approximately 700 barrels of produced water from the Loco Hills Flood. This will be supplemented by fresh water from Double Eagle Water Corporation, which is Caprock water.

Q Are you presently recycling the water produced from this stage, or your pilot flood?

A We are.

Q What is the approximate amount of water per well per day that you expect to inject?

A Well, we plan to inject as close to 500 barrels a day as we can. The range will probably be from 200 to 500. Some of the wells are much tighter than others.

Q The water will be furnished by Double Eagle Corporation is Ogallala water from the Lea County Basin, is it not?

A This is correct.

Q How many wells are in the proposed flood area?

A There will be 62 wells within the 1,480-acre area.

Q Do you know what the cumulative primary was for this acreage?

A These wells made 5,212,693 to the first of the year.

Q What do you estimate that your secondary reserves are that you may recover?

A At this time, we are calculating that we will recover

50 per cent of primary, which would equal 2,606,347 secondary reserves.

Q What is the current average production per well today, at this time?

A For all leases involved, approximately one and a half barrels per day is the current production, per well.

Q Do you have anything further that you want to offer or discuss at this time in connection with this proposed application?

A I don't think so.

MR. RUSSELL: Mr. Examiner, at this time I move the introduction of Exhibits 1 through 6.

MR. UTZ: Without objection, Exhibits 1 through 6 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits  
Numbers 1 through 6, inclusive,  
were admitted in evidence.)

MR. RUSSELL: I have no further direct examination of this witness.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Crow, I note you don't have any cement tops on these. These were not available?

A No, sir, these were not available. I looked, and if

I would have had any at all, I would have calculated the others, based on the one, but I could not find any cement logs available.

Q Do you intend to test casing on these wells before you inject?

A Well, we usually will install a pressure gauge on the annular side, too, where we could note at any time we did have a casing failure, if this would be sufficient. We usually do not actually test the casings. Injection, as I noted before, would be below a packer set approximately 50 feet from the bottom of the casing, with inhibited fluid in the annular space.

Q That will be plain tubing?

A It will be plastic-lined tubing.

Q I believe you stated that you would recycle your produced water?

A Yes, sir.

Q Now, you said 62 wells in the unit. Does that include injection wells, or just producing wells?

A That is the entire number of wells between this 1,480 acres, which would include the total of 16 injection wells, the three pilot and the 13 --

Q Excluding Sinclair's? There are three now, and you have 13?

A Yes, sir.

Q How many leases are actually in this unit that you have outlined here in red?

A Well, there is the Burch C, the Burch B, the Keely C, the Keely B, and that is all. And the State 1, just an injection well on the State Lease.

Q So there are five separate leases.

MR. UTZ: Any other questions of the witness?

MR. RUSSELL: No further questions.

MR. UTZ: You may be excused. Are there any statements in this case? The case will be taken under advisement.

Have you specifically checked the location of the wells on your application, and are you sure those locations are correct?

THE WITNESS: I have checked them once, but I will be glad to check them again.

MR. RUSSELL: See that they correspond with Exhibit Number 2.

I N D E X

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<u>EXHIBITS</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
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STATE OF NEW MEXICO     )  
                                   )     ss.  
 COUNTY OF BERNALILLO    )

I, SAMUEL MORTELETTE, 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.

Samuel Mortelette  
 COURT REPORTER

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Executive Hearing of Case No. 4029  
 heard by us on Jan 27 1969  
Shirley L. Giff, Secretary  
 New Mexico Oil Conservation Commission