

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 19, 1964

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of Skelly Oil Company)
for a pressure maintenance project,)
San Juan County, New Mexico.)
)

CASE NO. 2994

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

MR. UTZ: Case 2994.

MR. DURRETT: Application of Skelly Oil Company for a
pressure maintenance project, San Juan County, New Mexico.

MR. WHITE: If the Examiner please, Charles White,
of Gilbert, White & Gilbert, Santa Fe, appearing on behalf of the
applicant. I also have associated with me, Ronald Jacobs of the
Oklahoma Bar. We have one witness to be sworn at this time.

(Witness sworn)

MR. UTZ: Are there other appearances in this case?

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WILLIAM SINGLEY,

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

DIRECT EXAMINATION

BY MR. WHITE:

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

A William Singley.

Q By whom are you employed and in what capacity?

A Skelly Oil Company, Senior Production Engineer.

Q Have you previously testified before the New Mexico Oil Conservation Commission or one of its Examiners?

A Yes, I am.

Q Will you briefly state what Skelly is seeking?

A Skelly is seeking to convert its Navajo "P" Well Number Six, which is presently producing from the Gallup formation, into a water injection well in order to maintain pressure in the reservoir and compensate for injection with Humble in this pressure maintenance project to the Southeast of our lease.

MR. WHITE: If the Examiner please, the application includes Section 33 within the project area, and we would like to delete that section from the project area.

Q (By Mr. White) Then, it is Skelly's intention to carry on this proposal in corporation with Humble?

A Yes, sir, it is.



Q Will you refer to Exhibit One and explain that, please?

A Exhibit One, Part A, is a map of the area containing all Gallup wells within a two mile radius of our proposed injection well. Some of the main features are it shows Humble's Navajo "G" lease to the southeast of ours, which is part of their Project One. In the southeast, Township 31 North, Range 16 West, it shows the area where Atlantic has requested a secondary recovery project, and to the southwest part of the map, it shows the northern part of the Horseshoe Field, which Humble had a secondary recovery project there.

Q Now, refer to Exhibit Two and explain this, please?

Refer back to Exhibit One, what is designated there in red on the Humble Well Number Six?

A Skelly's Navajo "P" Number Six circled in red, that is the proposed injection well. Humble's Navajo "G" Number 15 is the well that Humble proposes to convert to injection, compensates across these boundaries.

Q That is the well circled in red, is it?

A Yes, it is.

Q Now, will you refer to Exhibit Two and explain your diagrammatic sketch?

A Exhibit Two is a diagrammatic sketch, proposed injection well, which is the Navajo "P" Well Number Six, which was initially completed on June 30, 1963 in the Many Rocks-Gallup Field. It shows that we set 27 feet of 7 5/8ths OD 17.7 spiral weld surface



casing cemented with ten sacks of regular cement. It shows that we set 1357 feet of $4\frac{1}{2}$ OD 9.5 pound, J55 production casing and that was cemented with 50 sacks of regular cement with six percent jell, 25 Gilsonate per sack, followed with 25 sacks of regular cement with 2 percent calcium chloride added. It shows we propose to run 1300 feet of $2\frac{3}{8}$ ths OD, 4.7 pound J55 EUE tubing. We set a retrievable type production packer at approximately 1270 from the surface. It shows the perforations in this well to be from 1305 to 1310, which is in the Tocado sand.

Q Where do you obtain your source of water?

A Well, initially, we will obtain our source of water from the Humble Oil and Refining Company. Humble presently has a Morrison water supply well which furnishes water to the Horseshoe Field, and that water is being used also in Humble's pressure maintenance project, and we will be furnished water by Humble for this well.

Q What type of water will it be?

A It is a saline water. There have been no recent chemical analyses of this water to our knowledge, but on the initial completion of this well, Humble took a test and it was found to be salty.

Q Do you treat the water and if so, with what?

A We do not intend to treat the water. Humble is treating the water, furnishing it to us, they are having it treated with a bactericide at this time, and that is all I am sure of, is the



bactericide.

Q What will your rate of injection be?

A Our rate of injection into the Navajo "P" Number Six well, we will try to hold it within the lower limits of 90 barrels of water per day with an upper limit of 300 barrels of water per day. Probably maintain an average close to 150 barrels of water per day.

Q Under what pressure?

A Initially, we expect the water to be injected in a vacuum, and eventually the pressure may build up to a surface pressure of 600 pounds.

Q What will your average pressure be?

A Over the life of the field, probably be pretty close to 600 pounds.

Q In your opinion, will it be possible for any of the injected water to come in contact with any fresh water zones?

A No, it is not. These wells are drilled with air to the bottom and there are no water sands encountered.

Q Why do you consider it necessary for such a pressure maintenance program to be initiated at this time?

A It needs to be started at this time for four reasons. First, it is to maintain the reservoir pressure and prevent waste of the reservoir energy. Second, it will increase recoveries of oil. Three, it will extend the life of the field, and four, it will protect the correlative rights underneath our lease boundary.



Q Have you discussed this project with the State Engineer?

A Yes, sir, I have.

Q Do you recommend the adoption of any special pool rules?

A Yes, sir. I would recommend that project rules be granted similar to those granted by the Oil Commission in their Order Number R-2541 to Humble Oil and Refining Company.

MR. WHITE: If the Examiner please, the application sets out the proposed special rules and they were to include all the rules as contained in the Order R-2541, but through inadvertence, they failed to include all of Rule Seven of the order and Rule Eight of the order, and we would like to have all of Rule Seven and Rule Eight of Order R-2541 incorporated in the rules.

Q (By Mr. White) Briefly, what do you - -

MR. UTZ: The Examiner will take note of R-2541 in formulating rules for this project.

Q (By Mr. White) Were these exhibits prepared by you or under your direction?

A They were prepared by and under my supervision.

MR. WHITE: At this time, we offer the exhibits, and that concludes our direct.

CROSS EXAMINATION

BY MR. UTZ:

Q Did the rules in Order R-2541 include pressurability factors?



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A Yes, they did, they were included in Rule Eight.

Q I see.

A Of that order, which we ask to be included in it.

Q Those same factors and other engineering data in those rules will be satisfactory for your project?

A Yes, they will.

Q I note that you are only asking for one injection well, which will be the Number Six in the Southeast of the Southeast; is that correct?

A Yes, sir, that's correct.

Q Southeast-Southeast, Section 35. Do you have plans for any further injections?

A Yes, sir. We plan to expand our pressure maintenance project as soon as we can get an agreement on the royalty between our two leases. We have separate royalty under the two leases. Before we would be able to expand the project, we would have to make some sort of arrangements for that.

Q Then, this application at the present time is actually kind of a lease line agreement until you are ready to go on your full project?

A Yes, sir, that's correct.

Q All right.

MR. UTZ: Are there other questions of the witness?



CROSS EXAMINATION

BY MR. IRBY:

Q Mr. Singley, this injection is to be through tubing. Is this tubing lined?

A On our initial conversion of this one well, we do not intend to line the tubing. When we go into a full field, we will probably make other arrangements.

Q What about fluids in the annulus, do you plan anything on that, between the tubing and the casing?

A It is planned that we will inhibit the fluid between the annulus with some sort of chemical to make it non-corrosive.

Q That will be inhibited water?

A Yes, sir.

Q Now, you said that you drilled by air, and encountered no water sands. Did you find any fluid or gas whatever?

A No, sir, we did not.

Q Now, your application says in the Item Six that you may possibly later drill a well into the Morrison to supply your own water rather than taking it from Humble. Have you determined what that location would be?

A Yes, sir. That location would be a twin - - That location would be located in the Northwest-Northwest of Section 35. It will be approximately a twin to our Navajo "P" Number 11.

Q What was that township and range, please?



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A Township 32 North, Range 17 West.

Q Do you anticipate the water will have approximately the same chemical quality as that of Humble's Navajo "F" water well Number One?

A Yes, sir, I do.

Q Now, this analysis of the Humble water well that I have is dated December 16, '59. Did you state in your testimony that no subsequent analysis had been taken?

A I do not know of any subsequent analysis having been made. I cannot say there have not been, but I do not know of any.

Q Can you advise me at a later date as to whether this has been done?

A I will do so.

Q And if so, furnish me a copy of the later analysis?

A I sure will. I will contact Humble on their analysis.

MR. IRBY: That is all the questions I have. Thank you.

* * * *

RE CROSS EXAMINATION

BY MR. UTZ:

Q Did you state whether, or not you intended to put a pressure gauge on the annulus on your inhibited fluid so you can readily detect any leakage that might occur?

A We will put a gauge on our annulus.

Q Do you know of your knowledge what the general



characteristics of the Morrison water in this area, or any other area of the basin?

A The Morrison water in this general area here is saline and it has a bacteria in the water which makes the water corosive. Thereare two methods of treating this type water. Both methods you put a bactericide in the water to eliminate that part of the corosion. Then, you can either line all your strings to prevent future corosion outside of bacteria, or you may add chemicals to make the water inert, and as I understand it, Humble and Atlantic each have taken different methods toward treating this water. Humble does not add the other chemical to their water, and Atlantic does, or could be reversed. I am not sure on that.

Q Generally speaking, is the Morrison water in the San Juan Basin pretty sorry water?

A Yes, it is. It is sorry water.

MR. UTZ: Are there any other questions?

CROSS EXAMINATION

BY MR. DURRETT:

Q Mr. Singley, am I correct that you do not have a lease line agreement with Humble?

A There is a lease line agreement with Humble. We were waiting on this hearing to have it signed. On that lease line agreement, we agree to inject in our Navajo "P" Well Number Six and ~~they~~ agree to inject into their Navajo "G" Number 15.

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Q But, it just hasn't been executed as of this date?

A That's correct.

Q Now, was the Humble pressure maintenance project instituted with this Order No. R-2541, which would be approximately sometime in August of '63?

A Yes, it was.

Q They are injecting in this well No. 16, is that correct, Section 2?

A They are injecting in Well No. 18 in Section 2 and also in Well No. 16 and 25 in Section 1, and we do not have any information as such, but Well Number 21 was drilled for an injection purpose.

Q Are you, or have you received any response from this Well Number 18?

A No, sir.

Q Would you give us briefly some production history on your Well Number Six, proposed injector? It is a producing oil well?

A Yes, sir, it is a producing oil well. Well Number Six was initially completed on June 30, 1963. At that time, it pumped 132 barrels in 24 hours. The well has now declined in the neighborhood of 70 barrels per day.

MR. UTZ: What date was that completion?

A June 30, 1963. The well is approximately eight months old.



MR. UTZ: Declined to how much?

A Approximately 70.

Q (By Mr. Durrett) Wouldn't you say this is a fairly substantial decline in a very short period of time?

A Yes, it is. I have made some reservoir calculations, which indicate after the well gets below the proration capacity, which is 70 barrels per day, which is top allowable, they would decline at a rate of roughly 50 percent per year.

Q Well, now, is that on all the wells that you have in this area?

A That is roughly for all wells of the Many Rocks-Gallup Field.

Q Well Number Three, which is a direct west offset, what is it making per day approximately now?

A We have not taken a recent test on that well.

Q Do you have any idea what it is producing?

A No, I do not. I could not say.

Q Is it making its allowable or do you know that?

A I would say that it is probably in the neighborhood of 70 or below at this time. Our lease has now gotten to where it has started to decline below the proration.

Q Do you feel that your wells on this lease will become what you would term stripper wells in the near future?

A I would say that- - By stripper wells, I am not sure of the Commission's definition of that. Is that wells that are

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say, marginal in classification, down in the ten barrel limit;
is that- -

Q Well, I am not sure of the Commission's definition of that either, but I would say- -

A I would say within two years, perhaps the wells would be approaching stripper classification without pressure maintenance project of some sort.

Q Now, if you institute your pressure maintenance project, the Commission approves it, how long do you feel it would take for the wells to reach that category?

A If we instigate a pressure maintenance project in the near future, I would say our lease would not be classified in the stripper stage--I couldn't say in the individual wells, but our lease would probably not be what we would call stripper production for perhaps six years.

MR. DURRETT: Thank you.

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RE CROSS EXAMINATION

BY MR. UTZ:

Q Is it your opinion that the oil in the vicinity of your Number Six well can be recovered through other wells in the area?

A Yes, sir, it is. We think they can be recovered from



our Navajo "P" Number Three, and Number 12, and some of it be recovered by our Navajo "P" Number Seven.

Q As well as some of it from Humble's Number 11?

A Yes, sir.

MR. UTZ: Are there other questions of the witness?

The witness may be excused. Are there statements in this case?

The case will be taken under advisement.

* * * *

STATE OF NEW MEXICO ¶

COUNTY OF BERNALILLO ¶

I, ROY D. WILKINS, Notary Public 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.

WITNESS my Hand and Seal of Office, this 29th day of February, 1964.

Roy D. Wilkins
NOTARY PUBLIC

My Commission Expires:

September 6, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2994, heard by me on *Feb 19*, 1964.

Shirley J. [Signature], Examiner
New Mexico Oil Conservation Commission



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