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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 19, 1970

EXAMINER HEARING

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)
IN THE MATTER OF:)
)

Application of Anadarko)
Production Company for)
two waterflood expansions,)
Eddy County, New Mexico. -)
)
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Case No. 4409

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Case 4409.

MR. HATCH: Application of Anadarko Production Company for two waterflood expansions, Eddy County, New Mexico.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the Applicant in association with Mr. Robert E. Anderson, a member of the Texas Bar who will present the case.

MR. ANDERSON: We will have one witness, Mr. Stumhoffer. Mr. Examiner, before proceeding, we wish to file an amended application, the purpose of which is to clarify the position of Stallworth oil and gas, the operating agent for waterflood Associates, Inc., which will be conducting a cooperative flood on lands adjacent to the lands for which Anadarko is making application. There was some doubt created by the language of our original application as to whether the Stallworth operations were previously authorized. We have found that it was authorized by previous order, and we have cited that in our amended application and that is essentially the purpose of it, to make the factual background a little clearer than it was in the original application.

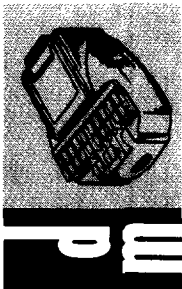
MR. NUTTER: These applications filed in July will be superceded by amended application.

MR. ANDERSON: And we would ask that the exhibits attached to the original application become exhibits attached to the amended application.

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MR. NUTTER: All right.

C. W. STUMHOFFER,

a witness, being first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. ANDERSON:

Q Mr. Stumhoffer, would you state your name, address and employment for the record?

A My name is C. W. Stumhoffer, S-t-u-m-h-o-f-f-e-r. I live in Fort Worth, Texas and employed by Anadarko Production Company as Superintendent, Secondary Recovery Division.

Q Have you previously qualified and testified as an expert witness before the Commission?

A Yes, I have.

MR. ANDERSON: Are Mr. Stumhoffer's qualifications exceptable?

MR. NUTTER: Yes, they are, please proceed.

Q (By Mr. Anderson) Mr. Stumhoffer, will you refer to Exhibits 1, 2 and 3, which are attached to the application and are now attached to the amended application which is being heard?

A Do you have the exhibits for the record?

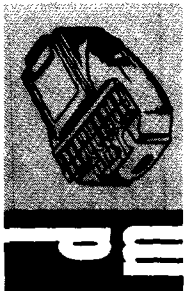
Q Noting particularly Exhibit 1.

A Exhibit 1 is the plat of the area in question showing the

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Anadarko operated properties in the area plus the offset operations of other operators.

Q Was that exhibit prepared by you or under your supervision?

A Yes, it was.

Q And does it accurately and correctly represent the well locations, property lines, operators, in the property lines?

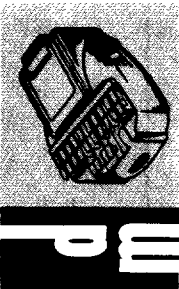
A Yes, it does. It shows our Federal "Q" lease which is an authorized project located in the northwest quarter of Section 3, Township 17 South, Range 30 East.

Q All right, would you then turn to Exhibit 2 and explain that?

A Exhibit 2 is a diagrammatic sketch of a typical water injection completion we propose for this project.

Q If permission is granted by this Commission, will all the injection wells for which application is made here be completed substantially as shown in the schematic diagram?

A Yes, they will except for -- we have had a change in plans since this exhibit was made. We have found we have Lovington sand present in the San Andres and we will propose to dually complete and inject into the Grayburg sand down the annulus between the tubing and the casing and into the Lovington sand down the tubing under a



packer. This exhibit only shows a single completion.

MR. NUTTER: In other words, your Metex and Premier here you would have injection through the annulus?

A That is right.

MR. NUTTER: And into the upper San Andres the Lovington-Sand would be down the tubing?

A We have had other completions in this area very similar. At the time we prepared this exhibit we did not know the Lovington was potentially productive in this area. We have drilled two wells since that time and found the Lovington to be present in this area.

MR. NUTTER: This application is for three wells, being your "JJ" 2 and your "KK" 1 and "KK" 3?

A That is right.

MR. NUTTER: And this schematic diagram is for "KK" 3?

A That is right.

MR. NUTTER: Could you give us the surface pipe and the amount of cement that was used in that surface pipe on those other two wells?

A I do not have that with me.

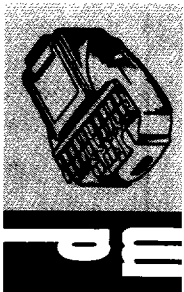
MR. NUTTER: You could furnish those for all wells?

A Yes, I can.

MR. NUTTER: Including the Stallworth Well?

A Yes, I can.

O (By Mr. Anderson) And turning to Exhibit 3, which is the



log of the typical injection well, would you identify that more completely and tell briefly what is depicted in Exhibit 3?

A Exhibit 3 is a gamma-ray neutron log of our Federal "KK" 3 located in the northwest quarter of the southeast quarter of Section 3, Township 17 South, Range 30 East and it shows the producing formation to the approximate top of the San Andres.

Q All of the information shown on all of these exhibits with the exception of Exhibit 2 and the changed plans is correct insofar as you know?

A Yes.

MR. ANDERSON: We move the acceptance of all of these exhibits which previously have been attached to our application.

MR. NUTTER: Anadarko's Exhibits 1, 2, 3, in Case 4409 will be admitted in evidence.

Q (By Mr. Anderson) Mr. Stumhoffer, would you very briefly explain the waterflood operations which are now being conducted pursuant to the authority previously given in Order R-2571?

A Waterflood operations were commenced on Anadarko's -- at the time it was Ambassador Oil Corporation Federal "Q" lease during 1963. At the time the waterflood was placed in operation two of the four wells on lease were converted to water injection, the No. 1 and 4 wells and two were

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completed for production. The waterflood response has occurred on this lease and as of January 1st, 1969, we had recovered approximately 70,000 barrels of waterflood oil from the two producing wells. Primary production from the lease was a hundred and thirty-six thousand barrels.

Q Are there other waterflood operations being conducted in the immediate vicinity?

A Yes.

Q Would you tell the Examiner what those are?

A Newmont Oil Company operates an active waterflood project to the north of the Federal "Q" lease and Stallworth Oil and Gas operates an active waterflood on their Park lease located in the northeast quarter of Section 3, Township 17 South, Range 30 East. Stallworth Oil and Gas Company is agent for Gas and Water Associates, Inc.

Q Are those the same zones Anadarko is here applying for permission to flood?

A Metex and Premier zones, not the Lovington.

Q Is that true of both the Newmont operation and Waterflood Associates?

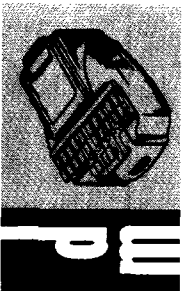
A Newmont has some completion in the Lovington but not offsetting our property.

Q Now in the application Anadarko has alleged that subject to the consent of this Commission, Anadarko and Stallworth

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operating agent for Waterfloods, have agreed cooperatively to conduct some operations. Would you explain briefly the intent of those operations?

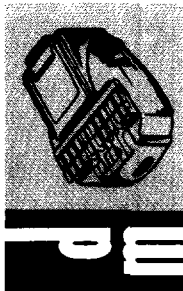
A In the cooperative agreement between Anadarko and Stallworth Oil and Gas, we plan to convert our Federal "KK" No. 3, Federal "KK" No. 3, to injection and Stallworth will convert its Park No. 4 to water injection.

Q Mr. Examiner, it is our understanding that Stallworth Oil and Gas has sent a telegram to the Commission indicating its agreement to conduct cooperatively the waterflood. I believe that has arrived.

MR. NUTTER: I believe that is correct. You might read that into the record.

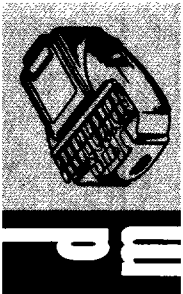
MR. ANDERSON: This is a telegram, "State of New Mexico, Oil Conservation Commission, Santa Fe, New Mexico." It is dated August 17th, 1970, at 4:07 P.M. Text of telegram, "We are agreeable to a cooperative waterflood of acreage in Section 3, Township 17 South, Range 30 East, Square Lake Field, Eddy County, New Mexico and will convert Stallworth Oil and Gas No. 4 Park Well to water injection." Signed by Stallworth Oil and Gas by Mr. Stallworth, Jr., Operator.

Q (By Mr. Anderson) Insofar as you know, Mr. Stumhoffer, do you anticipate to encounter approximately the same operating conditions and productive characteristics in the



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area of the cooperative waterflood as has been encountered in the Federal "Q" waterflood previously conducted?

A Yes, all operating problems will be very similar.

Q Upon what is that anticipation based?

A It is based on the fact that the formations we will be working will be the same as Federal "Q" project.

Q Now, then, with respect to the south half of southeast quarter, the southeast to the southwest and west half of the southwest quarter of Section 3, Anadarko is asking for consent to drill certain injection wells. Would you explain briefly the operating plan in the acreage sometimes referred to as General American Oil Company acreage?

A General American Oil Company acreage that we are referring to in the south half of Section 3, we propose to -- at the present time there are three producing wells on this acreage, two wells in the north half of the southeast quarter and one well in the northeast quarter of the southwest quarter. We have drilled and have not completed for injection a well in the northwest quarter of the southwest quarter of Section 3 and a well in the southeast quarter of the southeast quarter of Section 3 that will be used for water injection and this will constitute our waterflood development for this area at the present time.

There maybe a possibility after further study and evaluation that we may want to drill additional wells on undeveloped portions of the acreage but at the present time no definite plans.

Q In the application it is alleged that as to the south half of the southwest quarter and southwest quarter of the southeast quarter, Section 3, and the northwest-northeast quarter, the south half of the northeast quarter and southwest quarter of Section 10, there are waterflood possibilities. Is that the additional acreage you would anticipate considering for waterflooding in the future?

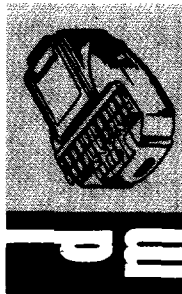
A Yes, there are two producing wells on the north half of Section 10 that we have not included in the waterflood area at this time. Actually, the No. 2 Well in the northeast quarter of the northeast quarter of Section 10 is included but we did not include No. 3 -- there is Anadarko's Federal "R" lease. The No. 3 Well on the northwest quarter of the northwest quarter of Section 10 is not included in the waterflood area requested pending further development in the area.

Q Does that well produce now?

A Yes.

Q From what formation?

A Grayburg.



Q Based upon present information available, would you anticipate that in this additional area you have just discussed you would encounter the same formations and same producing acreages as in the area you are now waterflooding or asking consent to waterflood?

A Yes.

Q And is it your thought that without waiting for actual response to injection you would have sufficient information to make application for waterflooding and have this application treated on an administrative basis rather than formal hearing?

A Yes.

Q And you are so requesting by administrative procedure mechanics be set up to accomplish this?

A We request administrative approval for additional development in this area.

MR. ANDERSON: I believe that's all the questions I have, Mr. Examiner.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stumhoffer, you indicated that you found you had this Lovington sand present. Is this going to be present in all wells?

A We had the Lovington sand present in the two wells we

drilled. We have not completed the Federal 1 "KK" located southeast, southeast of Section 3 and the No. 2 Federal "JJ" located in the northwest to the southwest of Section 3. These two wells both encounter Lovington-Sand with porosity that we plan to complete in.

Q What about "KK" No. 3?

A It is not deep enough for a Lovington.

Q You plan to look at it?

A Yes, we plan to deepen this well.

Q It is possible you have Lovington-Sand in those three wells of yours. How about Stallworth-Park 4?

A The cooperative agreement we have submitted to him for consent requests that Lovington-Sand be proven or disproven as being productive under his location.

Q There is possibility that all four wells could have this Lovington-Sand and be completed as dual completion. You will furnish us with schematic diagrams for all four wells?

A This was an oversight. We did have a change in this completion of the proposed injection wells. This was the original plan. Subsequent to drilling the well, we found we had to change our plans.

MR. NUTTER: Any further questions of Mr. Stumhoffer?

You may be excused. Do you have anything further, Mr. Anderson?

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MR. ANDERSON: That completes our presentation,
Mr. Examiner.

MR. NUTTER: I don't know if we got your exhibits.
Anadarko's Exhibits 1, 2 and 3 are admitted in evidence. Does
anyone else have anything they wish to offer in Case 4409?
The case will be taken under advisement.

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STATE OF NEW MEXICO)
) s
 COUNTY OF BERNALILLO)

I, SOVEIDA GONZALES, 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 Commssion 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.


 COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing held on date 8/19 1970
4409
 New Mexico Oil Conservation Commission

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