BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
Wednesday, May 9, 1973

EXAMINER HEARING

IN THE MATTER OF: Application of Texaco Inc. for a unit agreement, Eddy County, New Mexico.	Case No. 4963
and	
IN THE MATTER OF: Application of Texaco Inc. for a waterflood project, Eddy County, New Mexico.	Case No. 4964

BEFORE: Daniel S. Nutter,
Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: We will call next Cases Numbers 4963 and 4964.

MR. CARR: Case 4963, application of Texaco Inc. for a unit agreement, Eddy County, New Mexico. Case 4964, application of Texaco Inc. for a waterflood project, Eddy County, New Mexico.

MR. KELLY: Mr. Examiner, I am Booker Kelly of White, Koch, Kelly and McCarthy, appearing on behalf of the applicant, and we have marked our exhibits, Mr. Examiner, and consolidated them for purposes of testimony. I have one witness and ask that he be sworn.

KENNETH L. PETERS,

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you please state your name, position, and employer?

A My name is Kenneth Peters, I am employed with Texaco, Incorporated, in Hobbs, New Mexico, as District Production Engineer.

Q And you have previously qualified as an expert witness in your field before this Commission?

A Yes, sir, I have.

Q What does Texaco seek by these two applications?

A Texaco seeks permission to unitize 1,800 acres located

in portions of Sections 27, 26, 29, 31, 32, 33, and 34, all in Township 18 South, Range 30 East, Eddy County, New Mexico, consisting both of State and Federal lands; and the proposed unit will consist of a total of 45 acres located in the Benson Queen Grayburg North Field, and that Texaco seeks to initiate secondary recovery operations in the subject unit by converting 21 producing wells to injection, and also Texaco seeks authority to expand the unit area and to drill and/or convert additional wells in the proposed unit prior to response without hearing and notice, subject to administrative approval of the Commission, and that the requested proposed secondary recovery project be authorized and governed by provisions of Rules 701, 702, and 703, the Oil Commission's directives.

Q All right. First, going to the Unit Agreement, is Exhibit Number 1 a copy of the proposed Unit Agreement?

A Yes, sir, it is.

Q Would you show the Examiner where the unit area is defined by a plat and by legal description?

A Exhibit A of the proposed Unit Agreement is in the rear of this Unit Agreement and it defines the proposed unit by 15 individual tracts; and, on Page 2 of the Unit Agreement, Section 2, the unit area is defined, containing 1,800 acres, more or less, in Eddy County,

New Mexico, both of State and Federal lands.

Q There is no fee land here, is that right?

A That is correct.

Q What is the unitized formation?

A The unitized formation is in Section 2, Paragraph G, Page 2, and it's defined as the stratigraphic interval of the Guadalupian series of the Permians, known as the Queen Formation, and that's on the PGAC Acoustic Gamma Ray Log dated 9/29/63, in Texaco's L.A. Fanning "B" Well Number 7, and that's located 980 feet from the south and west lines, Township 18 South, Range 30 East, and this is found between the depths of 2,250 feet and 2,339 feet, an interval of 589 feet.

Q Will Texaco be the unit operator?

A Yes, sir, they will.

Q What percentage does Texaco own of this unit?

A Texaco will operate the unit with 75 percent working interest in this unit. Exhibit B defines the 15 individual tracts and the summary at the last page of Exhibit B clearly defines the working interest owners.

Q Have all the working interest owners agreed to this Unit Agreement?

A To date, there is 100 percent interest owner working interest signed up and 99.15 percent of the overriding royalty interest has been signed up.

Q How do you stand with your basic royalty estate and the Federal Government?

A The Federal Government has tenatively approved the Unit Agreement, as well as the Commissioner of Public Lands, by letters dated October 4, 1972, and October 16, 1972, respectively. And, this subject agreement is similar to others that have previously been approved by the Commission.

Q Now, going to the waterflood aspects of the case, you have a plat marked Exhibit 2 which defines both the unit and the waterflood area?

A Yes, sir, in Exhibit 2, the 1,800-acre proposed unit is outlined in the dashed line and the proposed injection wells are shown with a triangle around them. There will be 21 injection wells and 24 producing wells. The pattern will be an 80-acre 5-spot, and secondary recovery will recover an additional 1,669,000 barrels of secondary oil. And, this unit will reach a peak rate of 2,800 barrels of oil per day, which will occur 18 months after commencing injection; and there are no other waterfloods in this field.

Q Is there any other producing zone in this field?

A No, sir, there are not.

Q These are all single completions?

A Yes, sir, that's correct.

Q And all of the proposed injection wells and producing wells are now drilled?

A Yes. There is no tenative development drilling plan.

Q Now, going to Exhibit 3, your structure map, would you explain that project?

A The structure map is a structural contour on the top of the Queen sand and it is in 20-foot intervals. Basically, the first commercial production in the Benson Queen North Field was from the Simms and Reece McClay Well Number 1, and that was completed September 1, 1954, and production was derived from the Upper Queen Formation of Guadalupian series of the Permian Age. The Benson Queen North Field is located in the back-field reef area of the Capitan Reef Front. Locally, the field is a stratigraphic trap, limited by an up-dip porosity and permeability pinch-out towards the northwest, and the structure is monoclinal feature dipping to the southeast, and the producing formation itself is composed of fine to medium grained dolomitic and anhydritic, and development has been on a 40-acre spacing of an average producing depth of 2,950 feet and producing mechanism is solution gas dry.

As of March 1, 1973, the production records listed of 47 wells producing from the Benson Queen North Field, and the cumulative oil production to March 1, 1973, was

1,418,718 barrels of oil, which amounts to 93 percent of the ultimate primary. The estimated remaining primary reserves as of September 19 to March 1, 1972, or 1973, is 98,000 barrels; and during February 1973, the field produced 143 barrels of oil per day and 76 barrels of water per day, with an average GOR of 1136.

MR. NUTTER: Average approximate was 143?

THE WITNESS: Yes, sir, that's correct, barrels of oil per day.

Q (By Mr. Kelly) You've got all of the wells in this Queen Pool, then, except two, is that right?

A Yes, sir, that is correct.

Q Where are the wells located?

A Those other two wells are located on properties to the east of the proposed unit.

Q And have all the offset operators been notified of this application?

A Yes, sir, they have.

Q Who are they, do you know?

A The offset operators are Owen F. Featherston, and Franklin, Astin and Faire, Incorporated; both of Roswell, New Mexico.

Q Now, you have Exhibit Number 4, which is your current pro-well production figures?

A Yes, Exhibit Number 4 lists the current producing rate

allowables for the North Benson Queen Grayburg for the month of February 1973, and this is a list of the 47 wells giving the allowable, the oil, the water, and the GOR on a monthly basis; and during this month, the average per well rate was 5 barrels of oil per day, 3 barrels of water per day, with the same GOR of 1136. This indicates that the production has reached an advanced stripper state.

Q Now, Exhibit Number 5 is a typical diagramatic sketch for one of your injection wells, is that correct?

A Yes, this depicts the casing program with the surface casing, the amount of cement used, the cement being either circulated. This is circulated on both strings. The perforated interval and also the injection interval. On all of the 21 proposed injection wells, plastic-coated tubing with a Packer will be set above the interval. The tubing casing annulus will be loaded with inhibited water and a pressure gauge will be placed on the surface to monitor the injection.

Q Is there any fresh water near the surface?

A No, there is no fresh water in the area.

Q And there is no other production zones up structure, as I understand it?

A That is correct.

Q Do you feel that this installation will prevent migration

of any fluids to any other zone?

A Yes, sir.

Q What is the source of your water that you will be injecting?

A Texaco will seek commercial sources of water in the area. Negotiations are currently under way with two commercial firms.

Q How about your injection rate?

A The initial injection rate will be 385 barrels of water per day per well at approximately 2,500 psi.

Q Now, Exhibit Number 6 is the tabulation of all of the characteristics that you have shown on the diagramatic form for each well, is that correct?

A Yes, sir, that is correct, for all 21 wells, giving the surface casing, the depth, the cement used, and the production casing, and also the total depth and the injection interval of each well.

Q And Exhibit Number 7 is the actual footage location of each proposed injection well?

A Yes, sir, Exhibit Number 7 depicts the exact legal location of these 21 proposed injection wells.

Q Do you feel that the granting of these applications will allow you to recover oil that would otherwise be left in place, Mr. Peters?

A Yes, sir, that's true.

Q Do you think that the application will have any adverse effects on the correlative rights of others?

A No, sir, it will not.

Q Were Exhibits 1 through 7 prepared by you or under your supervision?

A Yes, sir, they were.

MR. KELLY: We would move the introduction of those exhibits at this time, and that concludes our Direct Examination.

MR. NUTTER: Texaco's Exhibits 1 through 7 will be admitted in evidence.

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Peters, all of these wells are equipped with casing throughout the pay, is this correct?

A Yes, sir, that is correct.

Q And in each instance, the Packer will be set immediately above the uppermost perforation in the well?

A Yes, sir, that is correct, and one joint of tubing, as close as possible.

Q Have you calculated your total water needs initially? It would be 21 times 380, but I thought you might have the figure.

A 8,000.

Q What was that?

A 8,000 barrels of water per day.

Q This will come from a commercial source?
A Yes, sir, that is correct.
Q Of course, when you start producing water, you will reinject that?
A Yes, sir, we will.
Q Now, I think you said that the unit contained all of the wells except two. Aren't there three wells out at the east end there, or are those producing from another pool?
A The proration records indicate that there are only two other wells outside of our proposed unit. Proration records as of February '73 show that there were a total of 47 wells.
Q Which two wells were the ones that --
A I don't have those designated. I can check that and furnish the information.
Q Apparently, one of those three wells must be shut-in and isn't indicated on the map.
A Yes, sir, that is correct.
Q At any rate, you've essentially got all of the North Benson Queen Pool under a unit here?
A Yes, sir.
Q And will be flooding the entire pool, almost?
A Yes, sir, that's correct.
Q Were those people given an opportunity to come into the unit and chose not to do so?

A Yes, sir, that is correct.

MR. NUTTER: Are there further questions of the witness?

(No response.)

MR. NUTTER: He may be excused. Do you have anything further, Mr. Kelly?

MR. KELLY: Nothing, Mr. Examiner.

MR. NUTTER: Does anyone have anything they wish to offer in Case 4963 or 4964?

(No response.)

MR. NUTTER: We will take the case under advisement.

REPORTER'S CERTIFICATE

I, JOHN DE LA ROSA, a Court Reporter, 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.

John De La Rosa
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4963-4964 heard by me on 5/9, 1973

, Examiner
New Mexico Oil Conservation Commission

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