BEFORE THE

OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO
April 23, 1957

IN THE MATTER OF
CASE NO. 1247

TRANSCRIPT OF PROCEEDINGS

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTE FE
3-6691 2-2211

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 23, 1957

IN THE MATTER OF:

Application of Pan American Petroleum Corporation for an order authorizing the drilling of a salt water disposal well in the Hobbs Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order authorizing the drilling of a salt water disposal well at a point 1650 feet from the North Line and 840 feet from the West Line of Section 15, Township 19 South, Range 38 East, Hobbs Pool, Lea County, New Mexico. Applicant proposes to inject salt water in the lower San Andres formation, below the oil-water contact of the Hobbs Pool.

CASE NO. 1247

BEFORE:

Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will continue with Case No. 1247.

MR. COOLEY: Case 1247. Application of Pan American Petroleum Corporation for an order authorizing the drilling of a salt water disposal well in the Hobbs Pool, Lea County, New Mexico.

MR. NEWMAN: I am Kirk Newman, connected with the firm of Atwood and Malone, appearing for Pan American Petroleum Corporation.

J. W. MEEK

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

DIRECT EXAMINATION

BY MR. NEWMAN:

Q Will you state your name please?

A My name is J. W. Meek.

Q By whom and in what capacity are you employed, Mr. Meek?

A I am employed by Pan American Petroleum Corporation in the capacity of a petroleum engineer.

Q Have you previously testified before this Commission?

A I have.

MR. NEWMAN: Are the witness' qualifications acceptable?

MR. NUTTER: They are.

Q Are you familiar with the application in this case, and the purpose of the application?

A I am.

Q What is intended by this application?

A The intention of this application is to obtain permission to drill a salt water disposal well to be utilized in the Hobbs Field.

Q Will you give the exact location of the proposed well and its relation to the remainder of the Hobbs Field?

A The proposed well is to be located 840 feet from the West line and 1650 feet from the North line of Section 15, Township 19 South, Range 38 East. I have here some maps of the Hobbs Field to further illustrate this.

MR. NUTTER: Are those all identical, Mr. Meek?

A Yes, sir.

MR. NUTTER: Let's put one up on the board there.

A All right. We have shown here the Location, as a red dot, the proposed salt water disposal well depicted on a topographic map of the Hobbs Field. In general, the contours shown on the map are ten foot intervals, based primarily on well locations, to show the general nature of the terrain as slopping somewhat to the South. In other words, the well will be located at a relatively low point in the field to take advantage of gravity for a drainage system to be put in. Also, I would like to point out that the well would be located in a state lease which would be perpetuated through the life of the field, and the well itself is located, generally, in the South end of the Hobbs Field.

MR. NEWMAN: This map will be offered as Pan American's Exhibit One.

Q Will you state the completion procedure plan for this proposed injection well?

A Yes, I will. I have an Exhibit here I would like to introduce in conjunction with that.

MR. NEWMAN: That will be offered as Exhibit Two.

A We have here a schematic drawing of the proposed installation, and also the generalized completion procedure we propose to utilize on this well.

First of all, you will notice we propose to set nine and five-eights inch casing at three hundred feet and circulate cement. We

have an estimated top of the San Andres shown as 4160, minus 560 feet, and the entire string of seven inch casing will be set at total depth, and cemented with sufficient volume of cement to bring the cement back to the base of the salt. Then, we propose to perforate that casing string below any oil horizons, which will be determined by testing and by logs. The generalized procedure is that we will drill to approximately 4300 feet, which we feel is below any oil-water contact in the area, and then commence drillstem testing to ascertain positively if we are below any oil. Also, we propose to test to determine if the water is unfit for general use, and to conduct injectivity tests and we propose then to continue drilling and testing until sufficient injectivity has been obtained; and three, run logs, as I mentioned previously, then set our seven inch casing at total depth and cement and perforate the zones of injectivity, run tubing, and conduct final injectivity tests.

Q In what zone and formation are the proposed injectivity tests to be made?

A The proposed injectivity tests are to be conducted in what -- the lower portions of what is considered or known as zone three in the Hobbs Field. I have here an Exhibit I would like to discuss in conjunction with that.

MR. NEWMAN: This will be offered as Exhibit Three.

A Now, prior to discussing this particular exhibit, I would like to show its -- trace it on the map.

Here we have the Humble State "A" No. 2, which has presently been converted into a disposal well in the Central-Western portion of the Hobbs Field, and goes down to the Pan American State "A" Tract No. 1, State A Tract No. 111-X, which is actually a Drinkard Well, as shown here, and then goes down to the State A Tract 6 well No. 24, which is in the general vicinity of our disposal well, and is a well on which we have taken penetrations to encounter water in Zone Three, and also a well on which we have a log.

First of all, I would like to point out, between the logs on the right and the center of the exhibit, that we have a sub-sea total depth of minus 641, which was the total depth of the discovery well drilled in 1929, and at which depth water was encountered. That well was subsequently plugged back on completion to minus 641.

All right, then over to the right we have the Humble Well, which was abandoned, and subsequently deepened to encounter zones of injectivity at depths ranging from 45 to 4700 feet.

Then, we have shown the log of the Drinkard Well, just shown the countinuity of the section in there. The log of -- The State "A" Tract 6 well number 24, was originally drilled in 1953, I believe, to Zone Three, and tested water in that zone, and was subsequently plugged back and completed in Zones One and Two of the San Andres. The blue coloring on these logs is to indicate the lack of oil productivity below the minus 641 interval in the field. We feel that the zones below there are either water bearing or dense --

Q Will the injection of water in the formation proposed for injection, effect reservoir conditions for the production of oil or gas?

A No, it will not.

Q Will the injection of the water effect reservoir conditions for the production of fresh water?

A No.

Q Will correlative rights in any way be effected by the granting of this application?

A No, they will not.

Q Will the granting of application prevent waste?

A Yes, it will prevent waste in that it will lower the economic limit on some wells, particularily in the town site area. When water production becomes rather high, we will be able to dispose of the water and not expand pits and there-by increase --

MR. NEWMAN: We would like to offer the exhibits designated as Nos. 1, 2, and 3 into evidence.

Q Were these exhibits prepared by you at your direction?

A Yes, they were.

MR. NUTTER: Without objection, Pan American's Exhibits 1, 2, and 3 will be received in evidence.

MR. NEWMAN: That's all.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Meek, you mentioned that this lease that you are proposing

to inject salt water into, will be perpetuated through the life of the field. Did you mean by that other production wells?

A Yes, sir, that's what I had reference to.

Q Now, Exhibit Two, doesn't show the tubing nor any packer. But you do state that you will run tubing rather than inject through the casing. Will a packer be used also?

A We have not ascertained what method we will utilize to protect, I guess you would call it, the injection string casing. It will either be protected by use of a packer or some other means will be utilized. We will definitely protect that casing above the injection perforation.

Q Would you use new casing for your seven inch string?

A Yes, it will be new casing.

MR. NUTTER: Anyone else have any questions of the witness? Mr. Mankin.

BY MR. MANKIN:

Q Mr. Meek, has Pan American identified the name of this particular well for disposal, as yet?

A I believe that will be identified as States "A" Tract Nine Number One, SWD.

Q That was not in your application or doesn't appear any where here, is that correct?

A I don't believe it does.

Q You will be agreeable to this particular order reflecting that particular number?

A Yes, that would be fine.

Q You indicate on your Exhibit Two, a schematic diagram for setting seven inch casing. In approximately what depth is that base of salt? Do you have any information on that?

A No, not specifically. I imagine that will be around 2,000 feet, 1,600; between 1,500 and 2,000 feet.

Q You indicate that this disposal will be primarily in Zone Three, or the lower portion of the San Andres, is that correct?

A That's right, the lower portion of Zone Three below any oil production.

Q How far below the lower-most producing zones of Pan American, or Sinclair's Wells in the area, will the top of the disposal zone be? Roughly, what do you anticipate that will be, the interval?

A Well, it's a little hard to say, how far that will be now, because we plan to develop our zones of injection based on tests and logs that will be run in conjunction with drilling operations. I might give you an approximate answer there, based on the information we have on the Humble Well, where such work has already been performed. It would be approximately two hundred feet, I would say.

Q About two hundred feet from the top of the probable disposal zone; from the bottom of the producing zone in surrounding wells?

A That's approximately it.

Q Are those surrounding wells producing from Zone Two, Zone One or Zone Two?

A What do you mean by surrounding wells?

Q Well, such as Pan American's Number 13 NW and Number -- Well, anyway the wells, the two wells in the East Half of the Northwest Quarter of Section 15?

A Yes, I believe those wells are producing from Zone Two and possibly the upper portion of Zone Three.

Q Is that likewise true of Sinclair's wells in the Northeast Quarter of Section 15, just East of Pan American's Wells?

A Well I can't speak for --

Q (Interrupting) You haven't determined where they come from?

A No, I think they have probable correlative rights with our wells there.

Q So it is your present feeling there will be at least two hundred foot intervals and possibly some type of a barrier in between to keep from hurting those off-set wells?

A Yes, providing we obtain the same zones of injectivity that Humble encountered on the West portion of the field. There should be some dense intervals in between there. I might point out that the location of our well here is where we have actually three wells, which would be encountered before we encounter anyone else's production, so it is imperative to us that we obtain zones of injectivity that will not damage the existing oil producing horizons.

Q Pan American does have two oil producing wells in the Hobbs Pool on Tract Nine that will perpetuate this particular lease?

A Yes, not only on Tract Nine, but some of the other State

Leases in there are part of the basic lease.

Q What is the anticipated quantity of water to be disposed of in this well?

A Well, there again, that's a little difficult to answer, because we have not established the injectivity of the particular well. We can only do that through drilling operations, but presently, water production in the Hobbs Field is about eight thousand barrels a day. We will have this well, and the other well, which is already in existence. We can possibly divide the water production there. That again will depend on the design of the system and how we route the line and so forth.

Q It is not known then, at the present, whether there will be a gravity system or pressure will be necessary?

A We propose, at present, to utilize a gravity type, closed-type gravity system. That's one reason we tried to locate the well on the South portion of the field, to utilize the difference in elevation.

Q Then it is your present feeling that this well will not aid secondary recovery in this pool?

A In the Hobbs Pool?

Q Yes.

A At this time I would say it would not.

Q It is also your feeling that it will not hurt anyone else's interest by the injection of water into this particular zone?

A Yes, sir.

MR. MANKIN: That's all.

MR. NUTTER: Anyone else have any questions of the witness?

BY MR. NUTTER:

Q Now, Mr. Meek, what type of a development is the Hobbs Reservoir?

A Well -- You mean the reservoir's performance?

Q The reservoir's mechanical drive?

A Well, primarily it is a water drive, but it has been subdivided into various zones, and actually, down here in the Southern portion, we have reason to believe it's behaving under a modified volumetric performance. In other words, we have had some pressure decline in the area, and it seems to be a little bit different in behavior than the main portion of the field.

Q Well, the bottom water drive, such as you might obtain from injecting water from this Zone Three, certainly wouldn't harm the reservoirs, would it?

A No, sir, I don't feel that it would harm the reservior, but we do feel that the zones of injectivity will not be in communication with other portions of the field.

Q So there actually wouldn't be any communication with the producing zones at all?

A We don't feel there would be, no.

MR. NUTTER: Anyone else have any questions of the witness? If not, the witness may be excused. Does anyone have anything further to offer in Case 1247? If not, we will take the case under advisement.

C E R T I F I C A T E

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing was reported by me in Stenotype at the time and place hereinbefore set forth; that same was thereafter transcribed into typewritten transcript by me; and that same is a true and correct record to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal this, the 8th day of May, 1957, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1247, heard by me on April 23, 1957.

Examiner
New Mexico Oil Conservation Commission