BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 8, 1969

EXAMINER HEARING

IN THE MATTER OF:	
Application of John A. Yates for a waterflood project, Eddy County, New Mexico.	Case No. 4226

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4226.

MR. HATCH: Case 4226. Application of John A. Yates for a waterflood project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee, Mr. Examiner, I have one witness, who is Mr. Mahfood, and he was sworn previously in the last case.

MR. UTZ: Any other appearances?

Let the record show there were no other appearances. And Mr. Mahfood was sworn in a previous case, and you may proceed.

EDDIE MAHFOOD

the witness, called by Mr. Losee, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. LOSEE:

Q. You are the Eddie Mahfood from Artesia, New Mexico, in the consulting engineer business, who previously testified in this Case 4225?

A. Yes, sir.

Q. Would you explain the nature of this application

of John A. Yates for a waterflood project?

A. It's obligated to inject water into the Grayburg formation and the Artesia Pool, in Section 5, Township 19, Range 28. It's located approximately seventeen miles southeast of Artesia.

Q. Please refer to what has been marked as Exhibit One --

A. Exhibit One is a lease map showing the location of the proposed injection area.

Q. Notwithstanding the fact, Mr. Mahfood, that you have a portion of Section 5 and Section 8, in Township 19 south, Range 28 east, outlined in red, the proposed project area is only what portion of this map?

A. This southeast corner of Section 5 -- it's circled in green on this exhibit.

Q. And that's one lease?

A. That is one lease -- it's the State A lease.

Q. Now, your injection wells or the proposed wells are the two and six?

A. That is correct -- they have a triangle inscribed around them.

Q. What is the producing interval within this project area?

A. It's the upper portion of the Grayburg and it's located approximately fifty feet at the top of the Grayburg.

Q. And does it have a common name?

A. First Grayburg and the Loco Hills, I guess -- it's active in several horizons.

Q. Does this map also show the offset operators and the formations from which they are producing?

A. Yes, sir.

Q. Are any of these other formations or other wells producing in the immediate area?

A. This formation, this upper Grayburg section, is being waterflooded in the Artesia Flood Number Three area, in the Twin Lakes area, which is approximately a mile away.

Also, in Section 10 of the same township -- operated by Depco -- the State Six Four-A lease.

Q. Out of curiosity, are they getting any response in that Section 10 flood?

A. They haven't done very well there at all.

Q. Please refer to what has been marked as Exhibit Two, being your compilation of your well completion data, and explain what information you feel is pertinent on this sheet?

A. Exhibit Two is the well completion data for all the wells, operated by John Yates, in Sections 5 and 8 -- it shows that these wells are all completed in the Grayburg section.

Q. Now, actually the only three that are within the project area are the State Two, Five, and Six?

A. That is correct.

Q. When was the first well completed in this area?

A. This discovery well in this area is known as State Number Four -- it was originally the State Number One and it was completed in 1955.

Q. It's an old well?

A. Yes, sir.

Q. Please refer to Exhibit Three-A, being a portion of the log on the proposed injection Well Two-A, and explain the importance of this exhibit?

A. I have shown the perforations in this well and the pay section, I have colored in red.

I have inscribed also the descriptions from the sample logs. And I have identified the zones by certain numbers here -- Zones One to A, Two-B, Three-A, Three-B and Four-A and Four-B. The Four-A and Four-B being the -- commonly known as Loco Hills sand -- the others are Dolamite

sections.

Q. Where is the top of this log?

A. This was a correlation log -- it was not logged to the surface. It was intended strictly as a correlation log.

Therefore, we had no print made of it.

Q. But that is the only log available of this well?

A. That is correct.

Q. Please refer to Exhibit Three, being the log of the State Number Six, and point out the important areas of this log?

A. This Exhibit Three-B is a radioactivity log of the State Number Six, and it shows the top of the Grayburg and the perforations in Zone B, Two-B, Four-A and Four-B.

Colored in red is the pay zones.

Q. Please refer to the diagrammatic sketch of the State A Number Two, being marked as Exhibit Four-A, and point out the important data on this sketch?

A. Exhibit Four-A shows surface casing set at four hundred thirty-six feet, which shuts off allknown water zones.

It is cemented to the surface. It shows the oil string, set at twenty-one zero two. The top is cemented at approximately fifteen thirty.

We propose to run tubing, two and three-eighths inch tubing, on a tension packer, and set it at about eighteen hundred thirty feet and to load the anulus with inhibited fresh water.

Q. Did you say whether your tubing was going to be lined?

A. It will not be lined, that is, we don't plan on loading it -- because we will have to inhibit the water.

We will be using fresh water which has a high oxygen content and it will have to be inhibited.

Q. Please refer to Exhibit Four-B, being the diagrammatic sketch of the State A Number Six and point out what is the important data on this sketch?

A. Like the previous diagrammatic sketch, this Exhibit Four-B shows surface casing set at four seventy, cemented to the surface, and protecting known water sands.

It shows the oil strings cemented to a total depth of two zero five zero, and cemented at the top at a calculated top of four hundred thirty.

We propose to run two and three-eighths inch tubing on a tension packer and set it at about nineteen twenty. And to load the anulus with inhibited fresh water.

Q. Now, you have noted on this sketch, as well as

the other one, the only water sands which will be encountered in drilling the well?

A. That is correct.

Q. Please refer to what has been marked as Exhibit Five, being the decline curve of this John A. Yates lease, and explain what this portrays?

A. This is the decline curb of all the Yates' leases, other than the Gulf lease -- all the State leases except the Gulf lease, I believe -- no, no, it does include the Gulf lease -- I'm sorry.

This does include the Gulf State lease. It shows the print completions and the normal decline curve. It also shows that these wells are in a depleted condition.

Q. Do you have the, referring only to the State A lease, which is the three wells in the project area; do you have a figure of the present production from these three wells?

A. Yes, sir -- in August, the three wells produced only sixty barrels of oil, which is approximately two barrels per day or less than a barrel per day per well.

Q. Are any of them making over two barrels per day?

A. No.

Q. Have they all reached a stripper state of

depletion?

A. Yes, sir.

Q. Do you know the accumulative production from the State A lease?

A. Through June of '69, the accumulative production was fifty-three thousand nine fifty-seven.

Q. Do you have an opinion as to the volume of oil that you expect to recover on secondary recovery?

A. Yes, sir -- based on core analysis, we have -- we should recover approximately one to one, on primary.

Q. So, there will be another fifty-three thousand barrels?

A. Approximately, yes.

Q. What is the source of water for this project?

A. This will be shallow water -- shallow ground water from this immediate area.

We advertised with the State Engineer recently for permission to drill a water well, and as far as I know, it has not been opposed.

Q. CID has not opposed it?

A. No, it's outside of their district.

Q. What volume of water do you anticipate will be necessary for the project?

A. We anticipate two hundred and forty barrels per day for both wells.

Q. At what pressure do you propose to inject the water?

A. The pressure is up to a thousand p.s.i.

Q. Were Exhibits One, Two, Three-A, Three-B and Four-A and Four-B and Five prepared by you?

A. Yes, sir.

MR. LOSEE: We move the introduction of the exhibits.

MR. UTZ: Without objection, the exhibits will be introduced in the record in this case.

(WHEREUPON, Applicant's Exhibits One, Two, Three-A, Three-B, Four-A, Four-B and Five were duly admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q. Mr. Mahfood, do I understand that all of the zones that you show; for example, on your Exhibit Three-B, will be injection zones?

A. Yes, sir.

Q. And they will of course all be below the packer and

in the interval shown on your diagrammatic sketches and the perforation of leases --

A. Yes, sir. Number Two, we are going to set the packer at eighteen thirty, which is above the top of the Grayburg.

Q. And was your tubing cement-lined; did you say?

A. No, sir. It will not be cement lined.

Q. Regular tubing?

A. Yes, sir -- that's four that will be inhibited.

Q. And your injection water will be inhibited fresh water?

A. Yes, sir.

Q. And you will put inhibited water in the anulus?

A. Yes, sir.

Q. And the tubing is two and three-eighths in both instances?

A. That is correct.

Q. Did you request administrative approval on your order for additional injection wells or do you anticipate any?

A. Yes, sir. I believe Mr. Yates is planning on doing some additional drilling if this pilot flood responds as we anticipate.

And in that case, we would be asking for

administrative approval for additional wells -- we will be asking for the unit, too.

MR. UTZ: Any further questions of the witness?

I believe you said the green area was one lease?

A. Yes, sir.

MR. UTZ: The witness may be excused.

Statements in this case? The case will be taken under advisement.

I N D E X

E X H I B I T S

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, CA FENLEY, 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.

Witness my Hand this 20th day of November, 1969.

CA FENLEY - COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4226 heard by me on Oct 8, 1969.

Examiner
New Mexico Oil Conservation Commission