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**BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Hobbs, New Mexico**

**April 14, 1971**

**EXAMINER HEARING**

**IN THE MATTER OF:**

**Application of Ebanandoah Oil  
Corporation for a waterflood  
project, Eddy County, New Mexico**

**Case No. 4520**

**BEFORE: Daniel S. Nutter, Examiner**

**TRANSCRIPT OF HEARING**

1 MR. NUTTER: We'll next take Case Number 4520.

2 MR. HATCH: Case 4520. Application of  
3 Shenandoah Oil Corporation for a waterflood project, Eddy  
4 County, New Mexico.

5 MR. JENNINGS: James T. Jennings, Jennings, Christy  
6 and Copple, Roswell, New Mexico, appearing on behalf of the  
7 Applicant, Shenandoah Oil Corporation, and we will have one  
8 witness, Mr. Toler.

9 (Witness sworn.)

10 NEIL F. TOLER

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

13 DIRECT EXAMINATION

14 BY MR. JENNINGS:

15 Q Would you state your name and occupation, please, sir?

16 A My name is Neil F. Toler, I am a petroleum engineer  
17 with Shenandoah Oil Corporation.

18 Q Mr. Toler, I believe you have not testified before the  
19 Commission on prior occasion, have you not?

20 A No, not before this Commission.

21 Q Could you briefly outline to the Examiner your  
22 educational and experience qualifications?

23 A Well, I graduated from Texas A. & M., 1958, with a  
24 petroleum engineering degree. After that, I worked with  
25 Texaco for twelve and a half years in various capacities

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1 as a reservoir engineer, operating engineer, both  
2 domestic and foreign, in areas of the Panhandle, north  
3 Texas, Trinidad, West Indies, and Midland, Texas.

4 Q And you're currently the supervisor or manager of  
5 Shenandoah's water flood project?

6 A Manager, secondary recovery.

7 Q Mr. Toler, are you familiar with application which  
8 Shenandoah has filed here for the water flood project  
9 number seven?

10 A I am.

11 Q It is in order of operators of the property covered by  
12 the application?

13 A They are.

14 Q I hand you what has been marked as Exhibit A, and ask  
15 you to tell what that is, and identify it, please.

16 A Exhibit A is a plat showing the location of Applicant's  
17 project and the lands therein. It is principally  
18 nonperipheral or nonsymmetrical type pattern flood if  
19 we plan to install on the properties shown.

20 Q What is the general location of the property?

21 A The general location is in Eddy County, New Mexico,  
22 Range 28, 29, Township 17 South.

23 Q How many wells do you propose to convert to water  
24 injection wells?

25 A Initially we plan to convert to injection nine wells.

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1 Q Go ahead. What is the current state of it and the  
2 nature of the production from these wells at this time?

3 A They are in a depleted state, and what will be classified  
4 as stripper.

5 Q I hand you what has been marked as Applicant's Exhibit B  
6 and ask you if you will identify that and tell what it  
7 is, please.

8 A This is a plat or regular contour map of Eddy County,  
9 showing the location of the application of our acreage,  
10 and the location of all the other wells within the radius  
11 of two miles from the proposed injection wells.

12 Q Now, what zones do you propose to inject in the wells?

13 A We propose to inject into the premier zones and the  
14 Maytex of the Grayburg formation.

15 Q Are there other floods being conducted in the same  
16 general area?

17 A Yes. Depco has the Artesia unit directly to the west  
18 of our property.

19 Q Are they successful?

20 A They are successful with their waterflood.

21 Q Do you feel that flooding these zones will result in  
22 increased ultimate recovery of oil?

23 A Yes.

24 Q What type of water do you propose to inject, Mr. Toler?

25 A We propose to inject fresh water.

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- 1 Q When produced water is available, will you also use it?
- 2 A When produced water becomes available, we will inject it.
- 3 Q Approximately how much do you propose to inject in the
- 4 well?
- 5 A We propose to inject approximately a hundred fifty
- 6 barrels of water per day into each zone for a total of
- 7 three hundred barrels per well per day with a total
- 8 injection rate of approximately twenty-seven hundred
- 9 barrels per day.
- 10 Q I hand you what has been marked Exhibits C1 through 9
- 11 and ask you to examine these and explain them to the
- 12 Commission.
- 13 A Exhibit C, which is numbered 1 through 9, are
- 14 diagrammatical sketches of the well and the proposed
- 15 equipment that we plan to put into the well.
- 16 Q Is that on each one of the nine wells listed in your
- 17 application?
- 18 A It is on each one of the nine wells.
- 19 Q Basically, what would reflect the manner in which you're
- 20 going to inject?
- 21 A Well, the manner in which we plan to inject will be
- 22 downhole through tubing, separated, the zones will be
- 23 perforated in the Maytex formation, injection into the
- 24 two zones will be separated by packers, and injection
- 25 will be monitored by downhole flow regulators.

1 Q Will that generally be carried out in each of the wells?

2 A This will be carried out in each of our injection wells,  
3 and it is being successfully done on our flood floor  
4 in the Shugart area at the present time.

5 Q I hand you what has been marked as Exhibit D, and ask  
6 you if you would identify that and tell what it is.

7 A This is a downhole sketch that Baker Oil Tool supplied  
8 us with the equipment on our flood floor. It is supplied  
9 as a supplemental to this testimony. And this is a  
10 typical example of what we have in flood floor.

11 Q Do you propose to follow that same plan in your project  
12 number seven?

13 A Yes, sir.

14 Q Has it worked successfully?

15 A Very successfully.

16 Q Mr. Toler, have you obtained the approval of the U.S.  
17 Geological Survey for your project?

18 A We have.

19 MR. JENNINGS: Has the Commission received  
20 approval from the U.S.G.S.?

21 MR. NUTTER: No, we have not received such approval.

22 Q (Mr. Jennings continuing) I hand you what has been  
23 marked as Exhibit F, and ask you if that is the  
24 communication received.

25 A This is the letter we received on April the 6th, 1971,

1 from the U.S.G.S.

2 Q That is approving the project?

3 A Right.

4 Q And I will hand you what has been marked Exhibit E,  
5 1 through 9, and ask you to identify those.

6 A These are radioactive logs of the proposed injection  
7 wells. They have been marked formation top, as shown  
8 on Exhibit C also.

9 Q Mr. Toler, were all the exhibits, except Exhibit E,  
10 which is the log and the letter from the U.S.G.S., which  
11 is Exhibit F, prepared by you or under your supervision?

12 A Under my supervision, yes.

13 MR. JENNINGS: We would at this time offer  
14 Exhibits A through E.

15 MR. NUTTER: Shenandoah Exhibits A through E  
16 will be admitted into evidence. And also, Exhibit Number F  
17 will be admitted into evidence.

18 MR. JENNINGS: Yes.

19 (Whereupon, Applicant's Exhibits  
20 A through F were duly admitted  
into evidence.)

21 CROSS EXAMINATION

22 BY MR. NUTTER:

23 Q Mr. Toler, your Exhibit Number A indicates that ten  
24 wells would be placed on injection. However, one well  
25 is indicated as being in phase two of the waterflood

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1 project.

2 A Yes, sir.

3 Q You are only considering for the first nine wells at  
4 this time; is this correct?

5 A Yes, sir. Right.

6 Q And you will later add this tenth well to your injection?

7 A Right, sir.

8 Q Now, with respect to Exhibits C1 through C9, they show  
9 the casing on the wells, but no tubing. So each one  
10 of these will have a string of tubing, and a packer?

11 A Right, as shown by Exhibit D.

12 Q As depicted on Exhibit D? In the interval that is shown  
13 on each one of these wells on Exhibit C1 through C9,  
14 there is an interval there of -- take C1, for example,  
15 from 2423 to 2433. Is that the present perforated  
16 interval?

17 A Yes, sir.

18 Q But you will open perforations in the Maytex as well?

19 A In selected intervals in the Maytex formation.

20 Q Is each one of these nine wells going to be duly complete,  
21 so-to-speak?

22 A Yes, sir, they will be.

23 Q With injections to the Maytex wells, the premier zone?

24 A Yes, sir.

25 Q And then you will have your Baker dual flow valves in

1 there so that --

2 A Dual packers and regulators.

3 Q I see. So injection will be into both zones, but there  
4 will be a packer above the uppermost injection?

5 A That's right. It will be isolated.

6 Q Well, how about the casing tubing and units? How will  
7 you set that?

8 A The tubing casing and units will have a pressure gauge  
9 on it and will be loaded with inert fluid.

10 Q Inert fluid?

11 MR. NUTTER: Are there any further questions of  
12 this witness? You may be excused. Do you have anything  
13 further, Mr. Jennings?

14 MR. JENNINGS: No, sir. That's all we have.

15 MR. NUTTER: Does anyone have anything they wish  
16 to offer in Case Number 4520? We'll take the case under  
17 advisement.

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# I N D E X

## WITNESS:

## Page

NEIL F. TOLER

Direct Examination by Mr. Jennings

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Cross Examination by Mr. Nutter

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## EXHIBIT

## MARKED

## OFFERED AND ADMITTED

Applicant's Exhibits A - F

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1 STATE OF NEW MEXICO )  
2 ) SS  
3 COUNTY OF BERNALILLO )

4 I, LINDA MALONE, Court Reporter in and for the County  
5 of Bernalillo, State of New Mexico, do hereby certify  
6 that the foregoing and attached Transcript of Hearing before  
7 the New Mexico Oil Conservation Commission was reported by  
8 me and that the same is a true and correct record of the said  
9 proceedings, to the best of my knowledge, skill and ability.

10 *Linda Malone*  
11 Court Reporter

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22 I do hereby certify that the foregoing is  
23 a complete record of the proceedings in  
24 the hearing before the New Mexico Oil Conservation  
25 Commission on June 14, 1971.  
26 *[Signature]*  
27 Secretary  
28 New Mexico Oil Conservation Commission