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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO  
January 5, 1972  
EXAMINER HEARING

IN THE MATTER OF: )  
Application of Reserve Oil and )  
Gas Company for a waterflood )  
expansion, Lea County, )  
New Mexico )

Case No. 4641

BEFORE: Daniel S. Nutter,  
Alternate Examiner.

TRANSCRIPT OF HEARING

1 MR. NUTTER: Case 4641.

2 MR. HATCH: Case 4641: Application to expand the  
3 South Langlie-Jalpat waterflood project in the Jalpat oil pool  
4 by conversion to water injection of the South Langlie-Jalpat  
5 unit well No. 23.

6 ERD M. JOHNSON

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

9 DIRECT EXAMINATION

10 BY MR. LOSEE

11 Q Will you state your name, please?

12 A Erd M. Johnson.

13 Q Where do you live, Mr. Johnson?

14 A Midland, Texas.

15 Q By whom are you employed and in what capacity?

16 A I am employed by Reserve Oil & Gas Company as manager of  
17 their Midland district.

18 Q You have not previously testified before this Commission.

19 Would you recite where you graduated and with what  
20 degree?

21 A I received a B.S. degree in petroleum engineering from the  
22 University of Tulsa in 1952.

23 Q Since then have you been engaged in the petroleum engineer-  
24 ing business?

25 A Yes, sir. Since 1954 I have been with Honolulu Oil

1 Corporation, Texaco, James A. Lewis Engineering, and Reserve  
2 Oil and Gas Company.

3 Q That has been continuously since 1954?

4 A Yes, sir.

5 Q Mr. Johnson's qualifications acceptable?

6 MR. NUTTER: Yes, they are.

7 Q (By Mr. Losee) What is the purpose of the Application in this  
8 Case 4641?

9 A We seek authority to expand the South Langlie-Jalmat water-  
10 flood project in the Jalmat Oil Pool by conversion to  
11 water injection of the South Langlie-Jalmat Unit Well No.  
12 23 located 2,310 feet from the south and west lines of  
13 Section 17, Township 25, South, Range 37 East, Lea County,  
14 New Mexico.

15 Q Now, the Commission on October 14, 1970 entered Order No.  
16 R-4022A, which authorized the South Langlie-Jalmat water-  
17 flood project, did it not?

18 A Yes, sir, that is correct.

19 Q How many wells were authorized to be converted to injection  
20 by that well?

21 A Ten wells authorized by that order.

22 Q When did you commence injection under the order?

23 A Injection into these ten authorized wells commenced April  
24 16th, 1971.

25 Q How much water has been injected up to December 1 of '71?

1 A A total of 731,690 barrels of water had been injected.

2 Q Has there been any response to injection at this time?

3 A No, sir. None of the production wells have shown any  
4 response to the water injection program to date.

5 Q How many barrels of oil were produced under primary means  
6 in this reservoir?

7 A Approximately 1.2 million barrels.

8 Q Mr. Examiner, we would ask that you take administrative  
9 notice of the testimony and evidence in Case No. 4046,  
10 which resulted in Order 4022A--R-4406.

11 MR. NUTTER: We will take notice of the Case 4406 and  
12 the contents thereof.

13 Q (By Mr. Losee) Please refer to what has been marked as Exhibit

14 A, Mr. Johnson, and explain what is shown by this exhibit.

15 A This is a map of the South Langlie-Jal unit and also the  
16 adjoining Langlie-Jal unit.

17 On this map are shown the locations of the existing  
18 injection wells as well as the proposed injection well No.  
19 23, as well as the proposed injection wells under the  
20 Langlie-Jal units.

21 Q Now, who is the unit operator of the Langlie-Jal?

22 A Union Texas Petroleum.

23 Q Has Reserve Oil & Gas Company and Union of Texas entered  
24 into a cooperative lease line agreement between these two  
25 units?

1 A Yes, sir, they have.

2 Q By reference to this map will you point out the wells that  
3 the Langlie-Jal unit is required to convert to injection  
4 and the wells that the South Langlie-Jal are required to  
5 convert?

6 A The Langlie-Jal unit will convert three wells, No. 79 and  
7 81, and 89.

8 Those are the ones, 79, 81 are the ones stated in the  
9 cooperative agreement that they have.

10 Q That offset?

11 A That offset our unit, yes, sir.

12 MR. NUTTER: Where is No. 89?

13 MR. LOSEE: It is in the east half of 17, Mr. Examiner.

14 THE WITNESS: 89, I don't believe, is really a part of  
15 the agreement, since it is not on the line, but it does complete  
16 a pattern.

17 Q (By Mr. Losee) What wells are you required to convert?

18 A Wells Nos. 15 and 23.

19 Well No. 15 was one of the ten authorized injection  
20 wells, and it is presently an injection well, so therefore  
21 we are now proposing to convert Well No. 23 as a part of  
22 this cooperative agreement.

23 Q Is there any log available on this Well No. 23?

24 A No, sir, according to our records there was no log conduc-  
25 ted on that well.

1 Q Please refer to what has been marked as Exhibit B and  
2 explain what is shown on this exhibit.

3 A This is a typical well log in the--of a well in the South  
4 Langlie unit.

5 This happens to be Well No. 18, which is nearby the  
6 proposed injection well 23.

7 It shows the limits of the unitized interval and the  
8 interval we propose to inject into it.

9 Q Please refer to what has been marked as Exhibit C, being  
10 the diagrammatic sketch of the proposed injection well, and  
11 point out the important items on this exhibit.

12 A 5 1/2" casing in the well was set at 2,792 in order to  
13 convert this well to an injection well into the unitized  
14 interval we proposed to run a cement liner from approximate-  
15 ly 2,700' down to the total depth of 3,305.

16 Then we will log the well and selectively perforate  
17 it and stimulate it.

18 After that we will run an internally coated tubing and  
19 a tension packer and set the tension packer approximately  
20 50' above the top perforation, and place inhibited fresh  
21 water in the tubing casing liner annulus.

22 Q And your exhibit shows where the cement is calculated on  
23 the surface casing as being 2,100' on the 5 1/2 casing?

24 A Yes. Our records indicate that the 5 1/2" casing was  
25 cemented with 200 sacks, which calculates approximately

1 2,100', being the top of the cement.

2 Also, there was a two-stage set at 1,122',  
3 cemented with 200 sacks.

4 The surface casing was set--I don't believe I show  
5 this--I think it was around 300', and it was cemented with  
6 155 sacks.

7 MR. NUTTER: Mr. Johnson, can't you obtain the depth  
8 for that surface casing and furnish that to us?

9 THE WITNESS: Yes, I have the well file.

10 MR. NUTTER: If you have the well file, let's get that  
11 in the record, if you have got it, please.

12 THE WITNESS: This record indicates that 8 5/8ths was  
13 set at 250'.

14 MR. NUTTER: Does it show where that cement circulated  
15 or not?

16 THE WITNESS: Yes, it says it was cemented to the  
17 surface.

18 Q (By Mr. Losee) What is the source of water for this project  
19 and this well?

20 A We purchase water from the Skelly water system.

21 The water is not treated.

22 It is handled in a closed system, and our water  
23 analysis to date indicates it is suitable for injection  
24 without further treatment.

25 Q It is non-potable water?

- 1 A That is right.
- 2 Q What is the present production of this well 23, oil  
 3 production?
- 4 A During November of 1971 Well 23 produced 25 barrels of oil.
- 5 Q How much oil?
- 6 A 35 barrels.
- 7 Q What has been the cumulative oil production up through  
 8 November of this well?
- 9 A 41,140 barrels.
- 10 Q Please refer to Exhibit D, which is a graph of the  
 11 production in the months of this Well 23.
- 12 A This is the plot of the oil production history for the  
 13 past five years from Well 23.
- 14 Q In your opinion, has this well reached a stripper state of  
 15 depletion?
- 16 A Yes, it has.
- 17 Q Will the conversion of Well No. 23 result in an efficient  
 18 waterflood pattern and sweep of the reservoir?
- 19 A Yes, we feel that conversion of this well to injection will  
 20 result in a more thorough and efficient sweep of the oil by  
 21 the waterflood.
- 22 Q Do you have an opinion as to whether the conversion of this  
 23 well will prevent waste and protect correlative rights?
- 24 A Yes, we believe it will.
- 25 Q What has been marked as Exhibit E is a cooperative

1 waterflood agreement between Union of Texas and Reserve.

2 Do you have anything further to comment on that  
3 agreement?

4 A No.

5 Q Your testimony has already covered it?

6 A Yes.

7 Q Did you prepare Exhibits A through D or were they prepared  
8 under your direction?

9 A They were.

10 MR. LOSEE: We move the introductions of Exhibits A  
11 through E.

12 MR. NUTTER: Exhibits A through E will be admitted in  
13 evidence.

14 MR. LOSEE: I have nothing further of the witness at  
15 this time, Mr. Examiner.

16 CROSS-EXAMINATION

17 BY MR. NUTTER

18 Q What will be the treatment of the annulus in this injection  
19 well?

20 A We plan to place inhibited fresh water above the packer in  
21 the casing liner annulus.

22 Q Then it would be equipped with a pressure gauge at the  
23 surface?

24 A Yes.

25 MR. NUTTER: Further questions of the witness?

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You may be excused.

Do you have anything further, Mr. Losee?

MR. LOSEE: No, sir.

MR. NUTTER: Does anybody have anything they wish to offer in this case?

We will take the case under advisement.



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