

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY )  
THE OIL CONSERVATION DIVISION FOR THE )  
PURPOSE OF CONSIDERING: ) CASE NO. 12,940  
)  
APPLICATION OF MEWBOURNE OIL COMPANY FOR )  
POOL CREATION AND SPECIAL POOL RULES, )  
EDDY COUNTY, NEW MEXICO )  
\_\_\_\_\_ )

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS  
EXAMINER HEARING

02 OCT 24 AM 9:12  
STEVEN T. BRENNER, CCR

BEFORE: DAVID R. CATANACH, Hearing Examiner

October 10th, 2002

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, October 10th, 2002, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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 Examiner Hearing  
 CASE NO. 12,940

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## A P P E A R A N C E S

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FOR GRUY PETROLEUM MANAGEMENT COMPANY  
and HARVEY E. YATES COMPANY:

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By: MICHAEL H. FELDEWERT

## FOR OXY USA, Inc., and OXY USA WTP, L.P.:

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P.O. Box 2208  
Santa Fe, New Mexico 87504-2208  
By: WILLIAM F. CARR

\* \* \*

(Continued...)

## A P P E A R A N C E S (Continued)

## ALSO PRESENT:

WILLIAM V. JONES, JR.  
Petroleum Engineer  
New Mexico Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   9:22 a.m.:

3           EXAMINER CATANACH: At this time I'll call Case  
4   12,940, the Application of Mewbourne Oil Company for pool  
5   creation and special pool rules, Eddy County, New Mexico.  
6           Call for appearances.

7           MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,  
8   representing the Applicant. I have three witnesses.

9           MR. FELDEWERT: Mr. Examiner, Michael Feldewert  
10   with the law firm of Holland and Hart here in Santa Fe.  
11   I'm here on behalf of Gruy Petroleum Management Company and  
12   the Harvey E. Yates Company.

13           I have no witnesses here today, I just have a  
14   brief opening statement.

15           EXAMINER CATANACH: Any additional appearances?

16           MR. CARR: Mr. Examiner, I'm William F. Carr,  
17   also with Holland and Hart, and the record should also  
18   reflect our firm's appearance in this matter for OXY USA,  
19   Inc., and OXY USA WTP, LP.

20           EXAMINER CATANACH: I'm sorry, W- what?

21           MR. CARR: -TP, LP.

22           EXAMINER CATANACH: Do you know what that stands  
23   for?

24           MR. CARR: No, sir, I do not.

25           EXAMINER CATANACH: Any other appearances?

1           Okay, will the witnesses please stand to be sworn  
2 in?

3           (Thereupon, the witnesses were sworn.)

4           EXAMINER CATANACH: Mr. Feldewert, would you  
5 please give us your opening statement?

6           MR. FELDEWERT: Thank you, Mr. Catanach.

7           Mewbourne's new Strawn well is located in the  
8 northwest quarter of Section 8. Gruy operates a declining  
9 Bone Spring well in the east half of Section 5, which is  
10 directly north of Mewbourne's well. They believe that the  
11 Strawn reef that Mewbourne has encountered may well exist  
12 in their -- or does exist in their declining Bone Springs  
13 well.

14           They hope to recomplete that Bone Springs well in  
15 the near future in this Strawn reef, however they're not  
16 yet in a position to recomplete that well and protect its  
17 correlative rights. They have a concern about the 4000 GOR  
18 that has been requested by Mewbourne, which is twice what's  
19 allowed by the statewide rules.

20           Heyco also has an interest in the west half of  
21 Section 5. They also operate the west half of Section 5.  
22 They have the same concern.

23           Neither party has had the opportunity to study  
24 Mewbourne's reservoir information to determine if, indeed,  
25 there is a concern with their request for a 4000 GOR. They

1 were not able to have a reservoir engineer here available  
2 for today's hearing.

3 I spoke with Mr. Bruce about this matter, and he  
4 was kind enough yesterday to provide me with their  
5 exhibits. I intend to forward them to both Gruy and Heyco,  
6 and they will proceed accordingly.

7 EXAMINER CATANACH: Okay. Again, Mr. Feldewert,  
8 Gruy's interest lies in Section 5?

9 MR. FELDEWERT: It would be the east half of  
10 Section 5, I believe, directly north. Yeah.

11 EXAMINER CATANACH: Okay, and the Heyco interest  
12 is --

13 MR. FELDEWERT: Heyco has an interest in the  
14 wells located on the east half of Section 5, but they're  
15 the operator in the west half of Section 5.

16 EXAMINER CATANACH: Okay, so at this point  
17 neither Heyco nor Gruy is opposing the Application but has  
18 concerns about the GOR --

19 MR. FELDEWERT: Correct.

20 EXAMINER CATANACH: -- is that what you're  
21 saying?

22 MR. FELDEWERT: Correct.

23 EXAMINER CATANACH: Okay. Thank you, Mr.  
24 Feldewert.

25 Mr. Bruce?



1 in the northeast quarter of Section 8, Township 18 South,  
2 Range 31 East, to be called the North Shugart-Strawn Pool.

3 Q. What is Exhibit 1?

4 A. Exhibit 1 is a land plat of Section 8, showing  
5 the deep wells in the Section. Both the Fren "8" 2 and "8"  
6 Number 3 wells have been completed in the Strawn formation.

7 Q. And will your next witness discuss these wells in  
8 more detail?

9 A. Yes, he will.

10 Q. What special rules does Mewbourne seek for the  
11 pool?

12 A. We request 160-acre spacing, an allowable of 1120  
13 barrels of oil per day, and a gas-oil ratio of 4000 to 1.

14 Q. What well-setback requirements does Mewbourne  
15 request?

16 A. We request the standard 660 feet from a quarter  
17 section line and 330 feet from a quarter-quarter section  
18 line.

19 Q. Referring again to Exhibit 1, what is the mineral  
20 ownership of the northeast quarter of Section 8?

21 A. The entire quarter section is covered by Federal  
22 Lease Number NM-33437, which has common royalty and  
23 overriding royalty ownership.

24 Q. What about the working interest ownership?

25 A. The east half of Section 8 is governed by a joint

1 operating agreement which allocates production to all the  
2 working interest owners. So all the working interest  
3 owners in the east half of Section 8 own an interest in the  
4 northeast quarter below the base of the Strawn formation.

5 Q. Below the base of the Bone Springs?

6 A. I'm sorry, the Bone Spring formation, that's  
7 correct.

8 Q. What is Exhibit 2?

9 A. Exhibit 2 is a land plat of the surrounding  
10 sections around Section 8.

11 Q. Are there any Strawn pools within a mile of the  
12 northeast quarter of Section 8?

13 A. No, there are not. However, there are a number  
14 of Morrow wells within a mile, and the Morrow well units  
15 are indicated in yellow on this exhibit.

16 Q. And the operator of each of those Morrow well  
17 units is highlighted in blue?

18 A. That's correct.

19 Q. Was notice of this case given to the Morrow well  
20 operators?

21 A. Yes, all Morrow well operators were given notice,  
22 although it was our understanding they -- we didn't have to  
23 by OCD Rules, but we did just in case they had any Strawn  
24 potential in their deep wells.

25 Q. And is Exhibit 3 a copy of the affidavit of

1 notice regarding notice to the offsets, other than  
2 Anadarko?

3 A. Yes, it is.

4 Q. Okay, what is Exhibit 4?

5 A. Exhibit 4 lists all the interest owners in the  
6 northeast quarter of Section 8.

7 Q. And that would be the royalty, overriding royalty  
8 and working interest owners?

9 A. That's correct.

10 Q. Okay. And one item: Anadarko does own an  
11 interest in your well, so it was notified as an interest  
12 owner rather than --

13 A. Right --

14 Q. -- an offset owner?

15 A. -- that's correct.

16 Q. And is Exhibit 5 my affidavit of notice to the  
17 interest owners in the northeast quarter of Section 8?

18 A. Yes, it is.

19 Q. Were Exhibits 1 through 5 prepared by you or  
20 under your supervision, or compiled from company business  
21 records?

22 A. Yes, they were.

23 Q. And in your opinion, is the granting of  
24 Mewbourne's Application in the interests of conservation  
25 and the prevention of waste?

1 A. Yes, it is.

2 MR. BRUCE: Mr. Examiner, I'd move the admission  
3 of Mewbourne Exhibits 1 through 5.

4 EXAMINER CATANACH: Exhibits 1 through 5 will be  
5 admitted as evidence.

6 EXAMINATION

7 BY EXAMINER CATANACH:

8 Q. Mr. Cobb, the east half of Section 8, you said,  
9 was covered by -- I'm sorry, is all of Section 8 covered by  
10 that federal lease, NM-33437?

11 A. All of -- No, the north half is. The north half  
12 of the southeast quarter is covered by Federal Lease Number  
13 NMLC-029393-A. The south half of the southeast quarter is  
14 Federal Lease Number NMLC-070133.

15 MR. BRUCE: Mr. Examiner, if I can interrupt Mr.  
16 Cobb, that lease that covers the north half of the  
17 southeast also covers the southwest, does it not?

18 THE WITNESS: Right.

19 MR. BRUCE: So --

20 Q. (By Examiner Catanach) Okay. So within Section  
21 8 there's three different federal leases?

22 A. Right, correct.

23 Q. Okay. And within the east half of Section 8  
24 there is a JOA --

25 A. That's correct.

1 Q. -- for anything below the base of the Bone  
2 Spring?

3 A. That's correct.

4 Q. Which would cover the Strawn interval in  
5 question?

6 A. That's correct.

7 Q. Okay. And am I correct in understanding --  
8 There's two wells. Both of the wells have been drilled to  
9 the Strawn, is that --

10 A. Have been drilled to the Strawn?

11 Q. There's two wells, the Number 2 and the 3?

12 A. Yeah, that's correct.

13 Q. Both of them are Strawn wells?

14 A. Right, that's correct.

15 MR. BRUCE: Yeah, Strawn.

16 THE WITNESS: They're Strawn -- Yeah, that's  
17 right.

18 EXAMINER CATANACH: Okay.

19 MR. BRUCE: Our next witness will describe -- The  
20 Number 2 well was originally a Morrow well, Mr. Examiner.

21 Q. (By Examiner Catanach) So at this time you're  
22 only seeking the creation of a pool comprising the  
23 northeast quarter of Section 8?

24 A. That's correct.

25 Q. Why doesn't that include the well in the

1 southwest quarter?

2 A. Why does it include the well?

3 Q. Is that -- I guess I'm just confused. That  
4 wouldn't include the well in the southwest quarter, the  
5 Number 3 well, in your new pool designation?

6 A. Southwest --

7 Q. Yes --

8 A. We don't have a well in the southwest.

9 EXAMINER CATANACH: I'm confused here.

10 MR. BRUCE: The Number 2 and Number 3 are both in  
11 the northeast quarter of Section 8.

12 EXAMINER CATANACH: Okay, I got you. So in your  
13 proposed rules, you wouldn't have any restrictions on the  
14 number of wells drilled? It would be --

15 MR. BRUCE: It would be statewide?

16 EXAMINER CATANACH: -- statewide? Okay.

17 Q. (By Examiner Catanach) Mr. Cobb, have any of  
18 your interest owners expressed any concern over your  
19 Application, as far as you know?

20 A. No, they have not.

21 Q. And as far as you know, other than the GOR, Heyco  
22 and Gruy haven't expressed any other --

23 A. Right.

24 Q. -- concerns to you?

25 A. Not that I know of.

1 Q. Okay. The proposed oil allowable, is that just  
2 -- Do you know if that's based on depth bracket allowable?

3 A. I'm not sure.

4 MR. BRUCE: Mr. Examiner, our engineer can  
5 discuss it, but it's basically the same allowable that was  
6 granted to EOG Resources for its Cedar Lake-Strawn Pool,  
7 which is further to the north, which they will testify  
8 about.

9 EXAMINER CATANACH: Okay.

10 MR. BRUCE: And it's less than if you took the  
11 300 -- if you took the -- I think the 40-acre depth bracket  
12 allowable is 320 barrels a day, so it would be less than  
13 four times that number.

14 EXAMINER CATANACH: Okay, I have no further  
15 questions of this witness.

16 I'm sorry, Mr. Feldewert, did you have any  
17 questions?

18 MR. FELDEWERT: No, thank you.

19 MR. BRUCE: Call Mr. Nelson to the stand.

20 RALPH L. NELSON,

21 the witness herein, after having been first duly sworn upon  
22 his oath, was examined and testified as follows:

23 DIRECT EXAMINATION

24 BY MR. BRUCE:

25 Q. Would you please state your name for the record?

1 A. Ralph Nelson.

2 Q. Where do you reside?

3 A. Midland, Texas.

4 Q. Who do you work for and in what capacity?

5 A. Mewbourne Oil Company as a geologist.

6 Q. Have you previously testified before the Division  
7 as a geologist?

8 A. I have.

9 Q. And were your credentials as an expert accepted  
10 as a matter of record?

11 A. Yes.

12 Q. And are you familiar with the Strawn geology  
13 involved in this Application?

14 A. I am.

15 MR. BRUCE: Mr. Examiner, I'd tender Mr. Nelson  
16 as an expert petroleum geologist.

17 EXAMINER CATANACH: Mr. Nelson is so qualified.

18 Q. (By Mr. Bruce) Mr. Nelson, could you identify  
19 Exhibit 6 and discuss the Strawn pools in the area that  
20 we're looking at?

21 A. Exhibit 6 is an area pool map showing the Strawn  
22 pools in and around the proposed North Shugart-Strawn. On  
23 the map you see that the Cedar Lake Reef field, as it's  
24 called, is an EOG recent discovery with special pool rules.  
25 Then you have the Cedar Lake North field, two wells on 40-

1 acre spacing; the Cedar Lake-Strawn Pool on 160-acre  
2 spacing; the Mesquite Pool, one well, 40-acre spacing; down  
3 to the southeast is the Lusk-Strawn, a large Strawn pool on  
4 160-acre spacing.

5 Q. So most of the Strawn pools in this area do have  
6 160-acre spacing?

7 A. They do. Also shown on this map is a line of  
8 cross-section, and also all wells shown here are Strawn  
9 penetrations or deeper.

10 Q. So this omits all the numerous shallow wells in  
11 this --

12 A. It does, yes.

13 Q. Okay. Would you move on to your cross-section  
14 and discuss the Strawn wells in this area?

15 A. On the cross-section, which is hung on the base  
16 of the Strawn, the lower Strawn marker, the first one on  
17 the cross-section is the EOG well which I spoke of, the Oak  
18 Lake "25" Federal Com, a Strawn mound well with about 300  
19 feet of buildup. It was completed in March of 2001,  
20 potentialed at flowing 900 barrels of oil a day.

21 The second well is the Mewbourne State "CE" well  
22 drilled in Section 2 of 18-30, completed in a thin Strawn  
23 interval, completed in August of 1991.

24 The third well is the first well that Mewbourne  
25 drilled in Section 8, completed as a Morrow well where it

1 still is currently producing. The well was completed in  
2 March of 2000.

3 The fourth well is the Number 3 Fren "8" Federal  
4 Com, drilled recently, still flow-testing. It encountered  
5 over 500 feet of mound.

6 The fourth well is the Fren "8" Number 2 Federal  
7 Com, drilled as a Morrow well, completed as a Morrow well.  
8 It has now been plugged back temporarily and is flow  
9 testing in the Strawn.

10 The sixth well is the Anadarko well located in  
11 Section 4, completed as a well and really has no Strawn  
12 development in it.

13 The last well, the Pennzoil well, is the one-well  
14 Mesquite-Strawn Pool and completed in a thin Strawn  
15 porosity stringer, completed back in 1967.

16 Q. Okay.

17 A. Also on the cross-section is marked a 2-percent  
18 porosity cutoff, which will be discussed by our engineer  
19 later. That was a cutoff used by EOG in their reservoir  
20 study.

21 Q. In looking at this exhibit, is the Strawn in your  
22 two wells -- it is a mound, rather than an isolated  
23 porosity development; is that not correct?

24 A. That is correct.

25 Q. And in looking at the three Mewbourne wells --

1 excuse me, the three Mewbourne Fren "8" wells on here,  
2 could you just described the order in which they were  
3 drilled for the Examiner, and completed?

4 A. Again, the Number 1 was completed in March of  
5 2000 as a Morrow well. The Number 2 was completed in  
6 August of 2001 as a Morrow well. And the Number 3 was  
7 drilled as a Strawn-Atoka test and completed as a Strawn  
8 well. At the time that that well was drilled, the Number 2  
9 was still a producing Morrow well.

10 Q. Now, looking at the cross-section, is this new  
11 pool geologically similar or even better to EOG's Cedar  
12 Lake Reef well?

13 A. In terms of mound buildup, we're quite a bit  
14 thicker than the EOG well. Porositywise, the Mewbourne  
15 Number 2 well has significantly better porosity  
16 development. Our Number 3 well, however, is similar to and  
17 made perhaps not quite as good as the EOG well.

18 Q. Okay. Looking at this map, is the new pool  
19 geologically separated from the other Strawn pools in this  
20 area?

21 A. Yes, it is.

22 Q. Okay, let's move on to your next exhibit, Mr.  
23 Nelson, your structure map. Could you just briefly discuss  
24 that for the Examiner?

25 A. The structure map is on the top of the Strawn.

1 It includes all the structure points from the surrounding  
2 Strawn wells from -- which are mostly Morrow completions.  
3 They're in the northeast quarter of Section 8.

4 You see the substantially higher structure points  
5 in the Number 2 and the Number 3 wells, as compared to the  
6 surrounding wells.

7 Q. And why don't you finally move on to your  
8 isopach, please, Exhibit 9?

9 A. The isopach map is a gross isopach of the Strawn  
10 lime. It has an overall similar shape as to the structure  
11 map, and it's my interpretation that is caused by the  
12 Strawn mounding in the Number 2 and Number 3 wells.

13 Q. Okay. Were Exhibits 6 through 9 prepared by you?

14 A. Yes.

15 Q. And in your opinion, is the granting of  
16 Mewbourne's Application in the interests of conservation  
17 and the prevention of waste?

18 A. Yes.

19 MR. BRUCE: Mr. Examiner, I'd move the admission  
20 of Mewbourne

21 EXAMINER CATANACH: Exhibits 6 through 9 will be  
22 admitted as evidence.

23 MR. BRUCE: And that's all I have of Mr. Nelson,  
24 unless you'd like him to discuss the West Lovington-Strawn  
25 Pool for a while?

1 EXAMINER CATANACH: No.

2 (Laughter)

3 THE WITNESS: Good.

4 EXAMINER CATANACH: Mr. Feldewert, do you have  
5 any questions?

6 MR. FELDEWERT: I do not, thank you.

7 EXAMINER CATANACH: Okay.

8 EXAMINATION

9 BY EXAMINER CATANACH:

10 Q. Mr. Nelson, with regards to your isopach map, are  
11 those control points to the west, south and the east, and  
12 to the north -- did you use those to identify the limits of  
13 the reservoir?

14 A. Yes, I did.

15 Q. Okay, so that would be the Number 4 well down to  
16 the south?

17 A. Yes.

18 Q. Now, did that have any buildup in that well?

19 A. The Number 4 well was drilled to the Morrow,  
20 recently TD'd. We have not started completion yet, and we  
21 will start first in the Morrow.

22 As to the Strawn, it didn't really have any  
23 buildup. However, there was a porosity zone identified  
24 with oil and gas shows that may be productive.

25 Q. So would that be part of this same Strawn buildup

1 here we're talking about?

2 A. I think probably the well is more associated with  
3 debris off the mound itself.

4 Q. Okay. Now, the well to the west, the Number -- I  
5 think that's Number 1; is that right?

6 A. Yes, yes.

7 Q. And that had what, 163, you're calling it?

8 A. Yes. And that well also has a similar tight zone  
9 in it, in the Strawn, with a little bit of porosity and  
10 hydrocarbon shows, we feel might be very close to the edge  
11 of the reservoir.

12 Q. Okay. The well to the north, the Gruy Petroleum  
13 Magnum 5 Federal Number 2, I believe that is?

14 A. Yes.

15 Q. You show that with 431 feet. Is that potentially  
16 productive from this Strawn interval?

17 A. Probably so.

18 Q. And the well to the east in Section 9, is there  
19 any chance that could be productive?

20 A. I don't think so. Unlike our Number 4 and our  
21 Number 1, there didn't seem to be any drilling breaks or  
22 shows in the Strawn interval there.

23 Q. So you guys feel like you have a pretty good  
24 handle on the location and extent of this buildup?

25 A. Yes, we do.

1 Q. Most of it is -- or at least the thicker portion  
2 is centered in the northeast quarter of Section 8?

3 A. Yes.

4 Q. Now, let's see, Your wells would still be a  
5 little structurally higher to Gruy's well in Section 5; is  
6 that your interpretation?

7 A. Yes, that's correct.

8 Q. Okay. So of the Number 3 and the 2 well, the 3  
9 is going to be the better well; is that right?

10 A. No, the Number 2 should be the better --

11 Q. Number 2 well.

12 A. -- well because of the greater porosity.

13 Q. On your cross-section exhibit, what are you  
14 showing to be the black and the green line in those wells?

15 A. That's the perforated interval.

16 Q. Okay. And so far, is the Number 2 well producing  
17 at a higher rate than the Number 3?

18 A. It is.

19 Q. Okay. Now, you said that you've looked at this  
20 reservoir in comparison to the Strawn reservoir that EOG  
21 encountered up to the northwest?

22 A. Yes.

23 Q. And it's your opinion that you have better  
24 porosity in at least one of your wells?

25 A. Yes, the Number 2 well has substantially higher

1 average porosity than the EOG well.

2 Q. Is there just one well in the EOG field?

3 A. Yes.

4 Q. And you have a thicker buildup in your Strawn  
5 interval?

6 A. Yes, we do.

7 Q. Mr. Nelson, what isolates this from the other  
8 Strawn intervals or pools in this area?

9 A. The surrounding wells, the surrounding Morrow  
10 wells, except those that I previously discussed, had no  
11 Strawn porosity present.

12 Q. For instance, the Strawn pool in Section 3 to the  
13 northeast, you're saying that that is geologically separate  
14 from your Strawn interval?

15 A. Yes, there are two wells in between that well and  
16 our pool -- three wells, actually, that have no Strawn  
17 porosity in them.

18 Q. And you've also examined that same -- to the west  
19 there, you've also got some separation from the other  
20 Strawn pool?

21 A. That's correct.

22 EXAMINATION

23 BY MR. JONES:

24 Q. Mr. Nelson --

25 A. Yes.

1           Q.    -- could you describe very briefly the  
2 development of these mounds and what type of environment  
3 they were developed in? I don't want to take a long time  
4 here, but is there anyplace in the world they're being  
5 developed today, similar to this?

6           A.    Well, it's been reported, although we have no  
7 core material to back that up, these mounds are reported to  
8 be phylloid algal mounds, severely exposed with porosity  
9 developed from leaching the fossil fragments. I suppose  
10 some of the grass beds in the Florida keys are similar to  
11 this type.

12                   I'm not sure that answers everything you wanted  
13 to know.

14           Q.    Yes, that's enough for this hearing.

15                   What about -- Did you find fusulinids in this --

16           A.    A few.

17           Q.    A few?

18           A.    A few.

19           Q.    Are you going to be the one talking about the  
20 permeability, or the engineer?

21           A.    Engineer.

22           Q.    Okay, so what about -- He will talk about the  
23 permeability-porosity relationship?

24           A.    Yes.

25                   MR. JONES: That's all my questions.

## FURTHER EXAMINATION

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BY EXAMINER CATANACH:

Q. Mr. Nelson, these are the same kind of similar buildups that we have in the Lovington area; is that --

A. They are, except about three to four times thicker.

Q. And Lusk-Strawn is quite an extensive pool, isn't it?

A. Yes, it is.

Q. And is that the same type of --

A. At Lusk-Strawn there are three areas that have mound buildup. And the bulk of the wells, however, are probably debris off those mounds or isolated periods of overall mound development.

EXAMINER CATANACH: I have no further questions.

MR. FELDEWERT: Mr. Examiner, I just have one question, if I may.

EXAMINER CATANACH: Go ahead.

## EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Nelson, looking at Exhibit Number 9, looking at Section 5, you show the Gruy Magnum "5" Federal well there, correct?

A. Yes.

Q. And that is a Morrow well?

1 A. Yes, it was completed initially as a Morrow well.

2 Q. Okay. Do you know where the Bone Springs well  
3 that Gruy operates is located in connection with this  
4 Magnum "5" well?

5 A. I do not.

6 MR. FELDEWERT: All right, thank you.

7 EXAMINER CATANACH: Okay, this witness may be  
8 excused.

9 BRYAN M. MONTGOMERY,

10 the witness herein, after having been first duly sworn upon  
11 his oath, was examined and testified as follows:

12 DIRECT EXAMINATION

13 BY MR. BRUCE:

14 Q. Will you please state your name and city of  
15 residence for the record?

16 A. Bryan Montgomery, Tyler, Texas.

17 Q. Who do you work for and in what capacity?

18 A. I work for Mewbourne Oil Company as manager of  
19 evaluations and reservoir engineering.

20 Q. Have you previously testified before the Division  
21 as a petroleum engineer?

22 A. I have.

23 Q. And were your credentials as an expert accepted  
24 as a matter of record?

25 A. Yes, they were.

1 Q. Does your area of responsibility at Mewbourne  
2 include southeast New Mexico?

3 A. Yes.

4 Q. And are you familiar with the engineering  
5 involved in this Application?

6 A. Yes.

7 MR. BRUCE: Mr. Examiner, I tender Mr. Montgomery  
8 as an expert petroleum engineer.

9 EXAMINER CATANACH: Mr. Montgomery is so  
10 qualified.

11 Q. (By Mr. Bruce) Mr. Montgomery, before you begin  
12 could you please summarize your conclusions for the  
13 Examiner?

14 A. What we found as we developed this reservoir was  
15 something we think is very similar to other reservoirs in  
16 the area, both geologically, as we've heard, and fluid- and  
17 permeability-, porositywise, and that those other  
18 reservoirs are producing in such a manner that these field  
19 rules are adequately put together to drain these  
20 reservoirs.

21 There's -- We've talked about the Oak Lake well  
22 in the Cedar Lake Reef Pool. It's on 160-acre spacing with  
23 an increased oil allowable of 1120 barrels of oil per day  
24 and 4000 GOR, and I'm going to show that those are proper  
25 spacing rules for good recovery of what's there

1 volumetrically.

2 Also, there are other pools we've seen that are  
3 spaced at 160 and with a special GOR of 4000.

4 Q. Okay. Mr. Montgomery, let's refer to Exhibit 10,  
5 and before you launch into that, you've got three columns  
6 there. The first one is the Cedar Lake-Strawn Pool. That  
7 is a Mewbourne-operated pool; is that correct?

8 A. That's correct.

9 Q. And that's on Mr. Nelson's Exhibit 6, and that's  
10 to the west of your new pool?

11 A. That's correct.

12 Q. And then the Cedar Lake Reef-Strawn Pool, that is  
13 the EOG pool to the northwest of your pool; is that  
14 correct?

15 A. Yes.

16 Q. And that's the one that was -- That's just been  
17 in the last year or two that that one was discovered?

18 A. That's correct.

19 Q. Okay. And then the third column is your proposed  
20 pool?

21 A. Yes.

22 Q. Okay. Well, let's go into your Exhibit 10 and  
23 maybe go down, without going into detail on every single  
24 item, and discuss what this exhibit contains.

25 A. Okay. On the left side we see groups of -- or

1 several entries for factual information and conclusions.  
2 The first five, starting with Date of First Production,  
3 down to the Number of Wells, shows some things about these  
4 two pools that are already producing and have special pool  
5 rules, and then our own pool that has been just recently  
6 completed and tested.

7           You see the dates that they came on. We've  
8 talked about the 160-acre spacing, the oil and GOR  
9 allowables.

10           The Cedar Lake-Strawn Pool has four wells, of  
11 which three really were the main contributors, and the  
12 Cedar Lake Reef had one well.

13           The next six items, from Initial Reservoir  
14 Pressure down to Estimated Formation Volume Factor, are  
15 there to show the very similar nature of the fluids that we  
16 have here. These reservoirs are characterized by volatile  
17 oils that have higher GORs and higher initial oil  
18 gravities. They also have -- you see the pressures  
19 initially here and the estimated formation volume factor  
20 that's used in calculating volumetric analysis.

21           The next set of information I want to point out,  
22 I guess, are the next six items, starting with Date of Last  
23 Production and ending with Estimated Economic Life. Those  
24 are data that we have taken from decline-curve analysis in  
25 the first two pools, and then we've done some analysis in

1 our own pool, and those show cumulative oil production, gas  
2 production, and with projected decline curve analysis the  
3 estimated ultimate oil and gas reserves and life of the  
4 pools.

5 And then the next three items is information that  
6 I put together with the help of our geologist to do  
7 volumetric analysis in these pools, to try to find out with  
8 the net pay thickness and porosity and water saturation,  
9 just how much original oil is in place to begin with, so  
10 that by using a reasonable recovery factor we can see what  
11 area these pools are draining.

12 And that brings us to the last four items, the  
13 Estimated Oil in Place, which is the volumetric number we  
14 talked about for oil and then gas, and then the second to  
15 the last item is the Estimated Recoverable Oil Per Acre,  
16 based the 30-percent recovery factor which has been shown  
17 in my own experience and in other places to be a reasonable  
18 recovery factor for oil reserves in volatile fluids.

19 And I just want to point out that that's actually  
20 a very high number. Typical oil recoveries are 15 percent,  
21 maybe. And so if you're able to drain 30-percent recovery  
22 factors from large areas, you're doing a very good,  
23 efficient job of recovering oil.

24 The very last item is basically calculated in the  
25 first two pools, and this would be the area drained based

1 on constant thickness of the four wells in the first pool  
2 or the single well in the second pool, and you see quite  
3 large areas there.

4 I'd point out the second pool is 169 acres.  
5 Basically that means I believe that the Oak Lake well,  
6 after recovering all its oil, will have recovered 30  
7 percent of the original oil in place over 169 acres.

8 The last column shows our pool, and there I've  
9 just assumed 160 acres for the northeast quarter of Section  
10 8 and the two wells that are in there, and then come up  
11 with volumetrically the estimated ultimate reserves that  
12 you see back up the column, using this 30-percent recovery  
13 factor. And I have some decline curves to help support  
14 this that go into more detail.

15 Q. Okay. And Mr. Montgomery, these figures that  
16 you've assumed a value there, would that conform with the  
17 fact that the mound in Mewbourne's wells is almost twice as  
18 thick as the mound in EOG's well?

19 A. Yes, we have a much greater thickness, and so  
20 that's shown in the estimated average thickness row. And  
21 then yes, from the geologic testimony you've seen, we see  
22 the 160 acres is also very reasonable.

23 Q. Okay. Well, the middle section of this exhibit  
24 discusses cumulative oil and gas production, et cetera.  
25 Why don't you move on to your two decline curves and tell

1 the Examiner what those show?

2 A. Okay, the first one in Exhibit 11 would be the  
3 Cedar Lake-Strawn field summary of four wells and their  
4 production histories. It's a monthly plot, as you can see  
5 at the bottom, for oil, gas, water and gas-oil ratio that  
6 are in the different colors. The oil is in green and you  
7 see -- This is what I would call a moderate productivity,  
8 based on the better productivity we'll see in other wells.

9 You see the initial oil rates jumping up every  
10 couple of months based on new wells coming on, but they  
11 peak around 9000 barrels a month, or 300 barrels a day.

12 This has also an interesting thing to look at  
13 that will become important, and that's the GOR history, in  
14 sort of that teal or strange blue color, green-blue. It  
15 shows initial GORs on this scale of, say, 2500 to 3000.  
16 And if you'll notice in the table we previously looked at,  
17 that's similar to the Oak Lake field that we'll see here in  
18 a minute, and that's representative of volatile oil. You  
19 typically have much higher initial natural GORs. You can  
20 pinch the wells back, but the GOR stays at 3000.

21 And then you see the history for the production  
22 of oil and gas and the GOR increasing naturally from  
23 pressure depletion.

24 So with statewide field rules being at 2000, we  
25 just don't think that's adequate for volatile oil

1 reservoirs, which we think we have here, based on data I'm  
2 going to show you later on our own wells and these two  
3 offset.

4           The next exhibit is of the Oak Lake well. It's a  
5 single well in that pool we have in our table, and I would  
6 characterize it as a very high-productivity well. It had  
7 special field rules that brought them an 1120-barrel-oil-  
8 per-day allowable, and you can see that first month they  
9 approach that 30,000 barrels per month or 1000 barrels a  
10 day, and then have declined for about a year since then.

11           Over to the right of these plots show the  
12 different values that are on the table for cumulative oil  
13 and ultimate recoveries for oil and also for gas.

14           What's interesting here is also that even though  
15 the well was pulled at very high oil rates, the GOR is  
16 still at about 3000 initially, and it increases gradually  
17 as depletion occurs. It's been my analysis that if you  
18 look at about 50 percent of oil recovered, based on our  
19 ultimate estimates, the GOR will be at about 5000 or 6000,  
20 in either case, the higher-rate single well or the more  
21 moderate rate multi-well field.

22           Q.    So your GOR projection, that would be normal for  
23 a solution gas drive reservoir?

24           A.    Yes, this is a solution gas drive reservoir.

25           Q.    And the oil decline on this well is steeper than

1 in the Cedar Lake-Strawn Pool. Would that be due to the  
2 higher permeability in the reservoir?

3 A. Yes, the higher permeability gives you much  
4 higher rates, and you're able to drain whatever you're  
5 connected to in a much shorter period of time. And so this  
6 one I think I project ten years of life, where the others  
7 are 48 years. The moderate-perm Cedar Lake Pool that we  
8 operate is a much longer life.

9 Q. Now, looking at these, you said that the GOR did  
10 start out in both of these pools, did start out higher than  
11 the normal statewide 2000 to 1, did it not?

12 A. That's correct. That is just based on the nature  
13 of the fluid. There's no oil rate you can flow it at, that  
14 would flow it at a lower GOR.

15 Q. Okay.

16 A. I'd also like to point out -- I guess I didn't  
17 make it clear -- if you look at the table and you notice  
18 that the 30-percent oil recovery is quite high and the area  
19 of drainage is quite high at 169 acres, let's say, for the  
20 Cedar Lake Reef Pool, you find that even pulling the  
21 reservoir at these high oil rates gave very good oil  
22 recoveries. It wasn't detrimental, there was no waste  
23 involved by higher oil rates.

24 Q. Okay. Well, let's move on to your Exhibits 13  
25 and 14, Mr. Montgomery, and discuss production from the two

1 Mewbourne wells in the northeast quarter of Section 8.

2 What is the first exhibit?

3 A. The first one would be the one labeled "Mewbourne  
4 Oil Company - Fren 8 #3", and it's also a production plot  
5 over a much shorter period than what we've been looking at,  
6 and it's a daily plot instead of a monthly plot. And you  
7 see the different oil, gas, water, flowing-tubing-pressure  
8 and gas-oil-ratio daily values plotted.

9 This was the first well that we completed in the  
10 Strawn, and we had a very thick column with very low  
11 porosity. We found some interesting things out when we  
12 perforated this well.

13 When we began the completion we started in the  
14 bottom third interval only of what you see perforated on  
15 the cross-section. We were curious to see if there was  
16 water at the bottom or gas at the top and the ratios that  
17 we would accumulate from production. It didn't show on log  
18 analysis that there was any water that would flow at any  
19 time, and really all we ever got was the kill water we put  
20 in every time we moved a plug and came up to the next zone.

21 So we did it in three steps, and you can see  
22 three broken production records in the beginning, in August  
23 of this year: the bottom third, then we've set a plug and  
24 moved up to the middle third. We got very similar --  
25 Actually, our GOR looks like it's actually coming down as

1 we move up the hole, but I believe that's just not enough  
2 time to stabilize into a measurable rate that I feel is  
3 accurate.

4 But what's interesting is, each time we  
5 perforated a different third, we continued to get about 200  
6 barrels a day. Then when we commingled all three, we still  
7 had 200 barrels of oil per day, showing very high vertical  
8 permeability. And basically we're testing the whole  
9 reservoir every time we test at any one set of the perms.  
10 There was just a little bit of maybe restriction coming to  
11 us from the upper intervals. So we thought that was  
12 important.

13 And in the next well we just perforated  
14 everything together. We found no gas at the top, no water  
15 at the bottom. We found that this well that had very low  
16 porosity, 2 to 3 percent, would actually flow 200 barrels a  
17 day.

18 We did actually DST this well and did not get oil  
19 to surface, but my calculations show about half a  
20 millidarcy permeability with skin damage. And of course,  
21 this is the very low-porosity rock.

22 Q. Mr. Montgomery, this well is still producing at  
23 somewhat under 300 barrels per day?

24 A. It is. We then frac'd with a large acid frac,  
25 even put it on compression. The well is now producing

1 about 275 barrels of oil per day, which is below the 40-  
2 acre allowable. And this is more of a moderate permeable  
3 well, it's not as prolific as the next one.

4 Q. Okay, and its GOR is currently somewhere around  
5 4000 to 1?

6 A. Right, maybe 3500 to 4000 to 1.

7 Q. Okay. Let's move on to your final exhibit, which  
8 is the production plot of the Fren "8" Number 2, and maybe  
9 discuss why you believe -- in more detail, why the GOR,  
10 increased GOR, is not a problem.

11 A. Okay. This well was completed also just recently  
12 and had much better porosity intervals. When we perforated  
13 it, it began to flow with the high flowing tubing pressures  
14 and high oil rates.

15 We called the NMOCD to ask for a special testing  
16 allowable, got verbal approval to have for this hearing  
17 some high oil rates to show you what happens to the well.

18 And as we began to open up the well and flow it  
19 at higher rates above the allowable, you see right off the  
20 bat, we basically took the well -- and again, the green  
21 line is oil -- from somewhere around 320 barrels of oil per  
22 day up to over 1300 barrels of oil per day, a three- or  
23 fourfold increase, and the GOR had a very small change.

24 The flowing tubing pressure barely changed at all  
25 also. It went from somewhere around 2800 to 2600 pounds

1 flowing tubing pressure. We had a lot more rate we could  
2 have continued to open up. We at that time felt like we  
3 might look at 1120 barrels of oil per day allowable, so we  
4 didn't go any further past that.

5           And we had this limited window before the  
6 hearing, so we began to reduce the rate so that we'd be  
7 back in compliance. And it's now below 320 a day and will  
8 be there until we have an order. And as we reduced the  
9 rate we found the same thing: The GOR barely moves, the  
10 flowing tubing pressure also stayed very strong. We feel  
11 like this is connected to a very large Strawn tank.

12           And in fact, we have something similar or better  
13 to the Oak Lake well. We have their daily information that  
14 was part of the record of the special pool rules in that  
15 hearing. Our flowing tubing pressures are higher, and our  
16 rates are higher than those in that well.

17           Basically what I felt like I concluded from this  
18 was that we were very similar and actually better than the  
19 Oak Lake well, and the GOR was very insensitive to the oil  
20 flow rate, showing no effects of any reservoir waste or  
21 damage, and that the initial GOR again was just naturally  
22 at around 3000 and that the statewide field rules of 2000  
23 just wouldn't be adequate for this type of reservoir. And  
24 by flowing at 3000, 4000 GOR, you wouldn't impair the  
25 recoveries at all, as shown by other wells in the tests

1 that we just looked at here.

2 Q. Okay. One item, Mr. Montgomery, how does  
3 Mewbourne plan on producing the two wells if this  
4 Application is granted?

5 A. We plan on producing the "8" Number 3, the poorer  
6 well, wide open, as much as it can produce. Right now I  
7 believe that to be 275 barrels of oil per day, and it will  
8 only decline from there. And the balance of the allowable  
9 that we are granted for this 160-acre spacing, we feel to  
10 share with -- and make up in the better well.

11 Q. So the Number 2 well would be restricted in its  
12 production?

13 A. It would have to be restricted dramatically.

14 Q. Okay. Could you summarize your conclusions for  
15 the Examiner, Mr. Montgomery?

16 A. Well, what we found were pools in this area that  
17 we felt were very analogous to our own pool, and those  
18 pools were on 160-acre spacing and had GOR allowables of  
19 4000 and had one instance of very high oil allowable. And  
20 since we were similar fluid and similar nature and this is  
21 sort of the standard in the area, we thought we should also  
22 be granted these special pool rules. And we don't think  
23 that by granting those there will be any problem with  
24 causing waste or correlative rights or any issues that this  
25 Commission might deem that important.

1 Q. Were Exhibits 10 through 14 prepared by you?

2 A. They were.

3 Q. And in your opinion is the granting of this  
4 Application in the interests of conservation and the  
5 prevention of waste?

6 A. Yes, it is.

7 MR. BRUCE: Mr. Examiner, I'd move the admission  
8 of Mewbourne Exhibits 10 through 14.

9 EXAMINER CATANACH: Exhibits 10 through 14 will  
10 be admitted.

11 MR. BRUCE: I have nothing further of this  
12 witness.

13 EXAMINER CATANACH: Mr. Feldewert?

14 EXAMINATION

15 BY MR. FELDEWERT:

16 Q. Mr. Montgomery, I'm looking at Exhibit Number 10.

17 A. Okay.

18 Q. You didn't include in that exhibit the Cedar Lake  
19 North Pool; is that right?

20 A. That's correct.

21 Q. Okay. Now, that pool, as I understand it, is the  
22 south half of 25 and the east half of 26, and it was  
23 created in 1994. Can you explain why you didn't include  
24 that in your analysis?

25 A. Well, I didn't include it mainly because I

1 thought that the two pools that we were including would be  
2 sufficient to show what we wanted to show.

3 Q. Does the Cedar Lake North Pool have a similar gas  
4 drive or solution drive?

5 A. I'm not familiar. I'm not intimately with the  
6 production or the study of that pool.

7 Q. Do you know whether it has similar fluid?

8 A. I don't know. I would assume it does.

9 Q. Okay. Now, the GOR on that is 2000 to 1; is that  
10 right?

11 A. I'm not sure. I think so.

12 Q. Okay. You also didn't include the Mesquite Pool.  
13 Can you explain why?

14 A. Again, it did not seem to be similar to the type  
15 of pool we had, as far as a prolific nature like the Oak  
16 Lake Pool, so we did not include it. I'm not sure what it  
17 made cumulatively or how it produced, but I assume it would  
18 be similar fluid. And even if it has a 2000 GOR, it's  
19 probably producing at higher than a 2000 GOR but under the  
20 allowable.

21 Q. What is different -- I guess you said you didn't  
22 include that in your analysis because you didn't think it  
23 was a similar pool? Can you explain why?

24 A. That's correct.

25 Q. Can you explain why?

1           A.    The productivity mostly. We have a pool that is  
2           -- even the poorer of our two wells is able to make 275  
3           barrels of oil a day. In the other two pools you  
4           mentioned, the wells were not that productive initially,  
5           and they didn't cum, you know, large numbers.

6           Q.    Is there any other reason?

7           A.    No.

8           Q.    Now, I looked through the order that was entered  
9           for the Cedar Lake Reef Pool, and it mentioned that EOG had  
10          done some testing on -- some ratio testing on the GOR. Is  
11          that what's depicted in Exhibit 14? Is that --

12          A.    I have a monthly plot in Exhibit 14, but I am  
13          intimately familiar with that order and the GORs they  
14          produce. That was a daily plot that they produced, that  
15          showed about three or four months of production at  
16          different oil rates, and the GOR stayed around 3100,  
17          irregardless of the oil rate that they produced.

18          Q.    Okay, did you do -- I guess my question is, did  
19          you do a similar ratio analysis on the Mewbourne Fren 8  
20          Number 2?

21          A.    Yes, those are -- the last two exhibits I  
22          showed --

23          Q.    Okay.

24          A.    -- are the analysis to show the insensitivity of  
25          GOR with dramatic changes in oil rates.

1 Q. And your testimony is that the ratio stayed  
2 basically the same?

3 A. That's correct.

4 Q. Okay, that's all I have. Thank you.

5 MR. BRUCE: I have one question of the witness,  
6 Mr. Examiner.

7 EXAMINER CATANACH: Sure.

8 FURTHER EXAMINATION

9 BY MR. BRUCE:

10 Q. Mr. Montgomery, based on Mr. Nelson's geology,  
11 aren't the Cedar Lake North and the Mesquite Pools much  
12 thinner and also smaller in areal extent than our pool?

13 A. Yes, they are.

14 MR. BRUCE: Thank you.

15 EXAMINATION

16 BY EXAMINER CATANACH:

17 Q. Mr. Montgomery, would your initial reservoir  
18 pressure of 5420 p.s.i. support your position that this is  
19 a new Strawn discovery?

20 A. Yes, it would.

21 Q. Okay. Now, I'm curious how you arrived, again,  
22 at the recovery factor of 30 percent.

23 A. Okay. That is a recovery factor you can find  
24 published in the reservoir engineering literature for more  
25 volatile oils. There have been studies done that have been

1 published. It was also documented in the EOG Oak Lake  
2 field rule hearings. They studied the Lusk field and had  
3 some data on that. 29 percent, they were coming up with.  
4 So I thought 30 percent was reasonable.

5 I also know on the Oak Lake well they presented a  
6 110-to-150-acre seismic anomaly. So when I used 30 percent  
7 and found 170 acres, I felt comforted that that combination  
8 validated the approximate 30 percent.

9 I've also had personal knowledge in the field, a  
10 volatile oilfield in Oklahoma that we gas-cycled, that  
11 showed those numbers to be very good numbers, 30 percent  
12 oil and about 65 percent gas are typical recoveries for  
13 original oil and gas in place in volatile oils.

14 Q. Okay. Do you know of any PVT data that's been  
15 conducted out here, gathered in these reservoirs?

16 A. We have PVT data on the Cedar Lake-Strawn Pool.  
17 Mewbourne operates those three wells. They're currently  
18 producing at this time. They're very good wells. And when  
19 we first drilled I believe it was the State "CE" -- we  
20 didn't drill it, when we first completed it we did take PVT  
21 analysis, and I used that in my analysis.

22 Q. What does that show basically?

23 A. It shows the oil to be a volatile oil, the  
24 initial gas-oil ratio to be around 2500. The formation  
25 volume factor you see here is basically right off of that

1 PVT analysis. It shows slightly different oil and gas  
2 gravities that you can see in my table, so I made my own  
3 analysis for the formation volume factor for the next two  
4 fields, with correlations in literature.

5 Q. Now, you don't have any PVT data for the North  
6 Shugart-Strawn Pool?

7 A. No, we do not.

8 Q. Would you expect that to be similar to the Cedar  
9 Lake?

10 A. Yes, we have -- I say we have no PVT data: We  
11 have the oil gravity measured, the gas gravity measured and  
12 the gas-oil ratio, and those three components are the most  
13 important in any correlation. But lab data we have yet to  
14 perform.

15 Q. Okay.

16 A. I would hope we would in the future do that.

17 Q. The drainage data for the Cedar Lake Reef Pool,  
18 you came up with a drainage area of 169 acres. That was  
19 based on actual decline curve analysis?

20 A. That's correct, we take the decline curve  
21 analysis for the ultimate recovery and the 30-percent  
22 recovery factor. And the only thing we don't know then at  
23 that point is the area using constant thickness. We know  
24 that these do mound, so it could be a larger area as it  
25 tapers off. I did not do a planimetered evaluation. I

1 just used constant thickness in the first two fields.

2 Q. Okay. And for the proposed pool you're just --  
3 you say assumed 160-acre drainage. Do you have any data  
4 that suggest that that may be the correct drainage area?

5 A. Yes, it's geologic in nature. We haven't  
6 produced the wells long enough to determine any kind of  
7 pseudo-steady-state boundaries or any kind of reservoir  
8 engineering data, but from geologic evidence, we have two  
9 wells in that 160, and we have the Gruy well to the north  
10 and these other wells in the other directions. They give  
11 me good confidence, also knowing other mounds can be 160,  
12 that we probably do have, and that would be the best  
13 estimate today, to use 160 acres. Further production would  
14 help us tell us that.

15 Q. Have you produced the Number 2 and the 3 well  
16 simultaneously to where you might determine if there's any  
17 interference from these wells?

18 A. We have, and I tried to get that test performed.  
19 We could not get our management to really perform that  
20 test. But we see no interference at this time, just by --  
21 I think the nature of one well is so prolific, and the  
22 other well is good but is not as good, and there's such a  
23 short period of time that without pressure measurements in  
24 the hole to look for subtle changes, just the production,  
25 there's no way to see any communication.

1 Q. Would a GOR of 3000 to 1 be sufficient, or is  
2 that not sufficient at this time?

3 A. It's not, I don't think. 3000 is about where  
4 we're at on the prolific well, which would dominate the  
5 shared allowable, so it would be the main well we'd worry  
6 about. But we're so close to that, it would cause us to  
7 really not use the 1120. We would be dominated by that  
8 ratio.

9 The Oak Lake well showed 3150, I believe, was  
10 their average GOR over the two or three months of high-rate  
11 testing. And as you see from natural depletion, the GOR is  
12 going to creep up anyway. But of course the oil rates  
13 creep up anyway, and they become under the allowables, and  
14 the GOR doesn't become that critical after the first year.

15 Q. Would it be appropriate to establish temporary  
16 rules and have you guys come back when you have more data?

17 A. I think so, yes. We're continuing to evaluate  
18 other drilling opportunities and the reservoir data. I  
19 would hope we'd have sufficient time to look at the  
20 reservoir data and drill.

21 Q. How much time do you think you'd need?

22 A. At a minimum, I would say 12 months, 12 to 18  
23 months would be fine.

24 EXAMINER CATANACH: Did you have any questions?

25 MR. JONES: Yeah, a couple.

1 EXAMINER CATANACH: Go ahead.

2 EXAMINATION

3 BY MR. JONES:

4 Q. Mr. Montgomery, the 5420 reservoir pressure, how  
5 did you get that?

6 A. DST.

7 Q. Okay. Okay, so --

8 A. In the "8" Number 3.

9 Q. Okay, "8" Number 3, the good well.

10 A. No, it's the more moderate well.

11 Q. The moderate well.

12 A. It's a good well, but it's not as good.

13 Q. It should have the same pressure as the other  
14 well, though?

15 A. I think so, this being a new pool. That should  
16 be the virgin reservoir pressure.

17 Q. And what permeability did that DST show?

18 A. It showed about a half of a millidarcy.

19 Q. Okay, that was a damaged --

20 A. And with damage. It also showed the skin damage,  
21 exactly.

22 Q. So what would be the undamaged permeability?

23 A. The permeability would stay the same. But with  
24 undamaged rock what we found was, until we acidized, this  
25 thing wouldn't really flow. And we put small acid jobs on

1 it, so it's still half a millidarcy, the way I think of  
2 permeability, but with zero skin after acid, instead of a  
3 positive skin.

4 Q. Okay, and that's at 2- to 3-percent porosity?

5 A. Yes.

6 Q. That's all you have in that well?

7 A. Yes. We think it's vugular and has the capacity  
8 for very high permeability-to-porosity ratio.

9 Q. Okay.

10 A. We perforated very tight-looking rock, and after  
11 acid had 200 barrels a day.

12 Q. Did the team that discovered this get a raise?

13 (Laughter)

14 A. We were very happy at Mewbourne Oil, we're very  
15 excited about this field and we think it's going to be good  
16 for everybody, all the owners and the federal government  
17 and state government.

18 Q. There may be some rigs showing up next to you  
19 there too?

20 A. Yes, we think so. We think it's important to  
21 have 160-acre development to start with in a case like that  
22 where these can drain large areas, that we don't have  
23 wasteful drilling episodes take place.

24 MR. JONES: Thank you.

25 EXAMINER CATANACH: Anything further, Mr.

1 Feldewert?

2 FURTHER EXAMINATION

3 BY MR. FELDEWERT:

4 Q. Mr. Montgomery, would you see any harm in having  
5 a 3000 GOR during the temporary pool rule period, while the  
6 parties are studying this area further?

7 A. It would restrict, I think, the ability to flow  
8 the wells at a reasonable rate that aren't causing any  
9 waste, so I would recommend that we don't use 3000 during  
10 this period, that we use 4000. I don't think it does any  
11 damage, it's just simple drainage. There will be drainage  
12 occurring no matter which GOR we use.

13 MR. FELDEWERT: Okay, that's all. Thank you.

14 EXAMINER CATANACH: Anything further, Mr. Bruce?

15 MR. BRUCE: Nothing further.

16 EXAMINER CATANACH: Okay, there being nothing  
17 further in this case, Case 12,940 will be taken under  
18 advisement.

19 (Thereupon, these proceedings were concluded at  
20 10:25 a.m.)

21 \* \* \*

22 I do hereby certify that the foregoing is  
23 a complete record of the proceedings in  
the Examiner hearing of Case No. 12940  
heard by me on October 10 192022.

24 David K. Catnach, Examiner  
25 Oil Conservation Division

