

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

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IN THE MATTER OF THE HEARING CALLED BY )  
THE OIL CONSERVATION DIVISION FOR THE )  
PURPOSE OF CONSIDERING: )

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

APPLICATION OF YATES PETROLEUM )  
CORPORATION FOR STATUTORY UNITIZATION )  
OF THE NORTH DAGGER DRAW-UPPER )  
PENNSYLVANIAN UNIT AREA, EDDY COUNTY, )  
NEW MEXICO )

CASE NOS. 13,227

APPLICATION OF YATES PETROLEUM )  
CORPORATION FOR APPROVAL OF A WATERFLOOD )  
PROJECT AND QUALIFICATION OF THE PROJECT )  
AREA FOR THE RECOVERED OIL TAX RATE )  
PURSUANT TO THE ENHANCED OIL RECOVERY )  
ACT, EDDY COUNTY, NEW MEXICO )

and 13,228

(Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

March 4th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, March 4th, 2004, 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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## I N D E X

March 4th, 2004  
Examiner Hearing  
CASE NOS. 13,227 and 13,228 (Consolidated)

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

FOR THE APPLICANT:

HOLLAND & HART, L.L.P., and CAMPBELL & CARR  
 110 N. Guadalupe, Suite 1  
 P.O. Box 2208  
 Santa Fe, New Mexico 87504-2208  
 By: WILLIAM F. CARR

\* \* \*

STEVEN T. BRENNER, CCR  
 (505) 989-9317

1           WHEREUPON, the following proceedings were had at  
2   9:01 a.m.:

3           EXAMINER STOGNER: At this time I'll call Case  
4   Number 13,227. This is the Application of Yates Petroleum  
5   Corporation for statutory unitization of the North Dagger  
6   Draw-Upper Pennsylvanian Unit Area, Eddy County, New  
7   Mexico.

8           Call for appearances.

9           MR. CARR: May it please the Examiner, my name is  
10   William F. Carr with the Santa Fe office of Holland and  
11   Hart, L.L.P. We represent Yates Petroleum Corporation in  
12   this matter, and I have three witnesses.

13           Mr. Stogner, I would ask that you also call Case  
14   13,288, which is Yates' Application for a waterflood  
15   project and qualification of the project area for the  
16   recovered tax rate. They cover the same area. The  
17   testimony overlaps. It will facilitate presentation. I  
18   would request that separate orders be entered in these  
19   cases.

20           EXAMINER STOGNER: At this time I'm going to call  
21   for consolidation for hearing purposes Case 13,228. This  
22   is the Application of Yates Petroleum Corporation for  
23   approval of a waterflood project and qualification of the  
24   project area for the recovered oil tax rate pursuant to the  
25   Enhanced Oil Recovery Act of New Mexico, Eddy County, New

1 Mexico in this instance.

2 Any additional appearances besides Yates in this  
3 matter? Okay.

4 And how many witnesses do you have, Mr. Carr?

5 MR. CARR: I have three.

6 EXAMINER STOGNER: You have three. Are any of  
7 your witnesses -- have they been previously in the other  
8 case?

9 MR. CARR: Mr. Humphrey has previously been  
10 sworn, and his qualifications as our geologist accepted and  
11 made a matter of record. The others have not.

12 EXAMINER STOGNER: Okay, I would like for the  
13 other two witnesses to please stand to be sworn at this  
14 time. Mr. Humphrey, I'll remind you that you're still  
15 under oath.

16 (Thereupon, the witnesses were sworn.)

17 EXAMINER STOGNER: Mr. Carr?

18 SUSAN P. VIERRA,  
19 the witness herein, after having been first duly sworn upon  
20 her oath, was examined and testified as follows:

21 DIRECT EXAMINATION

22 BY MR. CARR:

23 Q. Would you state your full name for the record,  
24 please?

25 A. Susan Patricia Vierra.

1 Q. Spell your last name.

2 A. V-i-e-r-r-a.

3 Q. Where do you reside?

4 A. In Artesia, New Mexico.

5 Q. And by whom are you employed?

6 A. Yates Petroleum Corporation.

7 Q. What is your position with Yates Petroleum  
8 Corporation?

9 A. I'm an associate landman.

10 Q. Ms. Vierra, have you previously testified before  
11 the New Mexico Oil Conservation Division?

12 A. No, sir, I have not.

13 Q. Would you summarize your educational background  
14 for Mr. Stogner?

15 A. I received a degree in business administration/  
16 marketing in 1980 and have continued to take oil and gas  
17 related classes through our local university.

18 Q. Could you review your work experience for the  
19 Examiner?

20 A. I was self-employed in the dairy and agriculture  
21 industry for 20 years, and in 2001 I was employed by Yates  
22 Petroleum Corporation as a mapping technician and then as a  
23 landman.

24 Q. Are you the land person who is responsible in  
25 Yates for the unitization efforts of the North Dagger Draw-

1 Upper Pennsylvanian Unit Area?

2 A. Yes, I am.

3 Q. Are you familiar with the Applications filed in  
4 each of these cases?

5 A. Yes.

6 Q. Have you been involved with the negotiations, not  
7 only with other interest owners but with the Bureau of Land  
8 Management and the State Land Office?

9 A. Yes, I have.

10 Q. Are you familiar with the status of the lands and  
11 the status of ratifications of these agreements?

12 A. Yes.

13 MR. CARR: We tender Ms. Vierra as an expert in  
14 petroleum land matters.

15 EXAMINER STOGNER: Ms. Vierra, again, you joined  
16 Yates in 2001?

17 THE WITNESS: Yes.

18 EXAMINER STOGNER: And prior to that you were  
19 doing land work?

20 THE WITNESS: No, self-employed in the dairy  
21 industry.

22 EXAMINER STOGNER: When did -- After being a  
23 mapping technician, when did you start doing land work,  
24 land duties?

25 THE WITNESS: I was hired in May of 2001 as a

1 mapping tech. Three months later I was trained as a  
2 landman.

3 EXAMINER STOGNER: Is this one of your first  
4 assignments?

5 THE WITNESS: Yes, it is.

6 EXAMINER STOGNER: So when you learned to swim,  
7 did somebody throw you in the deep end?

8 (Laughter)

9 EXAMINER STOGNER: So qualified.

10 MR. CARR: She has been swimming hard in the deep  
11 end.

12 Q. (By Mr. Carr) Ms. Vierra, would you briefly  
13 state what Yates seeks in this case?

14 A. Yates is seeking statutory unitization of the  
15 proposed North Dagger Draw-Upper Pennsylvania Unit Area,  
16 consisting of 5612.95 acres. We are seeking approval of a  
17 waterflood project in this unit area, and we are asking to  
18 qualify this project for the incentive tax rate authorized  
19 by the New Mexico Enhanced Oil Recovery Act.

20 Q. We've just reached an agreement with Marbob, Mr.  
21 Stogner, I want you to know.

22 All right, would you identify what has been  
23 marked for identification as Yates Petroleum Corporation  
24 Exhibit Number 1 and explain to the Examiner what it is and  
25 what it shows?



1           A.     Exhibit Number 1 is an orientation map showing  
2     the location of the entire Dagger Draw field in Eddy  
3     County, New Mexico. The red outlined nine-section area is  
4     the area that is undertaken by the North Dagger Draw-Upper  
5     Pennsylvanian Unit.

6           The second page to that exhibit is a blow-up of  
7     the Dagger Draw field. The magenta outline at the top of  
8     that diagram depicts the North Dagger Draw-Upper  
9     Pennsylvanian Pool, the blue outlined section in the middle  
10    outlines the South Dagger Draw-Upper Pennsylvanian Pool,  
11    and the red at the bottom identifies the Indian Basin-Upper  
12    Pennsylvanian Pool.

13           Back to the top of the map, the white block  
14    outlined in orange is the proposed North Dagger Draw-Upper  
15    Pennsylvanian Unit.

16           Q.     Are you aware of any other secondary recovery  
17    units in this area?

18           A.     There are none at this time.

19           Q.     Let's go to what has been marked Yates Exhibit  
20    Number 2. Would you identify that?

21           A.     Yes, Exhibit Number 2, also labeled as Yates  
22    Petroleum Exhibit A, is a plat map of the entire proposed  
23    North Dagger Draw-Upper Pennsylvanian Unit. The solid  
24    shaded tracts identify the federal lands, the diagonally  
25    slashed tracts identify the state lands, and the white

1 blocked are the fee lands.

2 On page 2 of that exhibit the individual tracts  
3 are identified, the acreage is given per tract, and also  
4 whether it's a federal state or fee land.

5 In summary, the federal lands are comprised of  
6 1805.17 acres for 32.16 percent of this unit, state lands  
7 total 1040 acres for 18.53 percent of this unit, and the  
8 fee lands are comprised of 2767.78 acres for 49.31 percent  
9 of this unit.

10 Q. And the plat which is the first page of this  
11 exhibit is actually the same as Exhibit A to the unit  
12 agreement; is that correct?

13 A. Yes, it is.

14 Q. Let's go to the unit agreement, Yates Exhibit  
15 Number 3. Would you identify and review that briefly?

16 A. Yes, Exhibit 3 is the Unit Agreement for the  
17 Development and Operation of the North Dagger Draw-Upper  
18 Pennsylvanian Unit. This unit agreement is a standard  
19 form, State Land Office, with amendments. This unit shows  
20 the character of the lands, it provides for the  
21 waterflooding, sets out the basis for participation of each  
22 of the owners of unitized substances and provides for  
23 filing periodic plans of development, which will be filed  
24 with the Oil Conservation Division when it's filed with the  
25 State Land Office and the BLM.

1 Q. When we talk about the changes to this agreement,  
2 there really is one principal change. What is that?

3 A. Yates Petroleum Corporation has added language  
4 that provides that 80 percent of the working interest  
5 owners -- 80-percent approval is required before there can  
6 be any expansion to this unit under the Statutory  
7 Unitization Act.

8 Q. That's actually Section 32 of the agreement; is  
9 that correct?

10 A. Yes, it is, on page 10.

11 Q. And basically what it provides, that before you  
12 can even propose to the State a statutory unitization  
13 effort you have to have 80-percent working interest owner  
14 support?

15 A. Yes, that's correct.

16 Q. And this would mean that Yates as a large owner  
17 has to acquire the support of the extra interest owners  
18 before any effort could be undertaken to expand the unit  
19 area?

20 A. Yes, that's correct.

21 Q. What is Exhibit Number 4?

22 A. Exhibit Number 4 is the participation factor by  
23 tract, listing all tracts in the unit and their unit  
24 participation factor.

25 Q. Is the basis for these participation factors set

1 out in the unit agreement?

2 A. Yes, it is.

3 Q. And that is a 70-percent acreage factor and a 30-  
4 percent remaining primary oil reserve factor?

5 A. Yes, that's true.

6 EXAMINER STOGNER: I'm sorry, would you repeat  
7 that question?

8 MR. CARR: Yes, 70-percent land, 30-percent  
9 remaining primary oil reserve.

10 EXAMINER STOGNER: That wasn't in the form of a  
11 question, Mr. Carr.

12 MR. CARR: Well, I'm testifying, I guess, Mr.  
13 Stogner, I don't know.

14 Q. (By Mr. Carr) Ms. Vierra, is that the formula  
15 that is set forth in this agreement?

16 A. Yes, sir, it is.

17 Q. And will the engineering witness review that  
18 formula for Mr. Stogner?

19 A. Yes, he will.

20 Q. Without the aid of his counsel?

21 A. Yes.

22 Q. Would you go to the unit agreement, which is  
23 marked as Exhibit Number 4? Does that differ from the  
24 agreement that is actually attached to the Application?

25 A. Okay, unit agreement is Exhibit --

1 Q. Exhibit Number --

2 A. -- 3?

3 Q. Yes, unit exhibit is Exhibit Number 3. And does  
4 that agreement differ from what was originally filed?

5 A. Yes, it does. If you will refer to page 5, tract  
6 participation, Section 13, the wording has been changed for  
7 the A equivalent in the tract participation ratio.

8 Q. Actually, we recently discovered just an error in  
9 the language in the agreement; is that not correct?

10 A. Yes, that's correct. Previously that sentence  
11 read that the area ratio based on the ratio of an owner's  
12 net acreage divided by the total acreage within the unit.

13 Q. So what we're talking about is tract  
14 participation, 70 percent A and 30 percent B, and in the  
15 first paragraph we simply had an error in the language. We  
16 had the words, "an owner's net acreage", instead of having  
17 total acreage within the tract; isn't that correct?

18 A. That's correct.

19 Q. It doesn't make any sense when you try and use  
20 that as it was written; is that fair to say?

21 A. Yes, that's correct, as previously stated.

22 Q. Ms. Vierra, does this change, the change that we  
23 have made, affect or reduce the interest of any interest  
24 owner in the unit area?

25 A. No, sir, it does not.

1 Q. No working interest owner's interest has changed?

2 A. No, sir.

3 Q. No non-cost-bearing interest owner has changed?

4 A. No, sir.

5 Q. Has the unit been reviewed with all interest

6 owners and all calculations made using an acreage

7 determination as set out in the agreement that is before

8 the Examiner?

9 A. Yes, sir.

10 MR. CARR: Mr. Examiner, what happened here is,

11 last week we were doing a final check, and somehow in the

12 drafting we have picked up these extra words, words from

13 another form unit agreement. And although we had all

14 assumed that it said that the area was the total acreage

15 within the tract divided by the total acreage within the

16 unit, we had put in owners' net acreage, and you can't make

17 it work because it doesn't even make any sense, because

18 you're valuing the tracts here, not at owner's interest.

19 The way you do it is, you get the tract there and then

20 apply the owner's interest. But it doesn't make any sense.

21 And this is -- We have, from the beginning, explained this

22 as the straight acreage calculation, and nothing here was

23 changed by this amendment.

24 If you look at page 12 of the agreement, the

25 agreement provides -- and it's page 12, Section 24.(3) --

1 and the agreement provides that "This Agreement...or the  
2 Unit Operating Agreement shall be amended in any and all  
3 respects necessary to conform to the Division's order  
4 approving statutory unitization."

5 And it goes on to say that the amendment "shall  
6 be deemed to be hereby approved in writing by the  
7 parties...without any necessity for further approval -- "  
8 that is, ratification, except ratification is required if  
9 it reduces, in paragraph (a), any royalty interest owner's  
10 participation, in paragraph (b), reduces any working  
11 interest owner's participation.

12 Here we have what I believe is akin to a *nunc pro*  
13 *tunc*. We're trying to make the language, if anybody ever  
14 sits down and reads it, work with what we've proposed and  
15 what this unit agreement does, and how all the schedules  
16 have been prepared.

17 And so we would request that the order that is  
18 entered in this case note the correct wording for subpart A  
19 on page 5. That will take care of it, and it will avoid  
20 confusion at a later date. It changes no interest. And I  
21 would be happy to provide a finding that takes care of  
22 that. It's just a -- really an error in drafting that's  
23 been bumping along for some time. But we think it would  
24 misleading to leave it in there, because someday someone's  
25 going to try and make it work, and the language simply

1 doesn't work. It doesn't make sense.

2 EXAMINER STOGNER: We'll definitely accept your  
3 assistance.

4 MR. CARR: And I will --

5 EXAMINER STOGNER: Now let's go back to Section  
6 13.A, and what it reads now is, A equals "the Area Ratio  
7 based on the ratio of the total acreage within the Tract  
8 divided by the total acreage within the Unit Area."

9 MR. CARR: Yes, sir.

10 EXAMINER STOGNER: So what should that amendment  
11 say?

12 MR. CARR: That is what it should say.

13 EXAMINER STOGNER: This is -- What is written  
14 here is what it should say?

15 MR. CARR: Instead of saying "the total acreage  
16 within the Tract divided by the total acreage in the Unit",  
17 it said the ratio of the owner's net acreage, which you  
18 can't figure out what that is, divided by -- it's just an  
19 error. It was drafting that we were looking at other  
20 formulas, and we just picked up the wrong words when we  
21 were drafting that.

22 EXAMINER STOGNER: So your exhibit today --

23 MR. CARR: -- is correct.

24 EXAMINER STOGNER: -- is correct?

25 MR. CARR: Yes, sir.



1 EXAMINER STOGNER: Okay. Please continue, Mr.  
2 Carr.

3 Q. (By Mr. Carr) Ms. Vierra, let's go to Exhibit  
4 Number 5, the unit operating agreement. Would you  
5 basically just review what this is?

6 A. Yes, Exhibit 5 is Yates Petroleum Corporation,  
7 the unit operating agreement for North Dagger Draw-Upper  
8 Pennsylvanian Unit, including Exhibits A through H. The  
9 operating agreement outlines the supervision and management  
10 of the unit, it defines the rights and duties of all  
11 parties, it shows how investments and costs are shared, it  
12 establishes the voting procedures for decisions to be made  
13 by the working interest owners, sets out the accounting  
14 procedures, shows how costs will be allocated and paid, and  
15 also contains many other standard provisions.

16 Q. There are some unique provisions in this  
17 agreement as well, are there not?

18 A. Yes, there are.

19 Q. Would you turn to Exhibit C in the unit Operating  
20 agreement, and that is entitled "Schedule Showing Unit  
21 Participation of Each Working Interest Owner"?

22 A. Yes, it is.

23 Q. How is this different from what will be set out  
24 in this agreement?

25 A. This is simply an added exhibit to help simplify

1 the working -- the understanding for each owner to look at  
2 this to see what their total unit participation is, rather  
3 than to have to individually identify their interest in  
4 Exhibit B, to come up with that summation.

5 Q. So instead of having to go tract by tract and  
6 then do another calculation to figure out what their total  
7 unit share is, this is an additional exhibit that just sets  
8 out the percentage interest in the unit of each owner; is  
9 that right?

10 A. Yes, that's correct.

11 Q. Are there other unusual or unique provisions in  
12 this agreement?

13 A. Yes, if you'll refer to page 17, Section 17.1,  
14 Withdrawal, this is a provision that was actually initiated  
15 by one of our working interest owners. This provision  
16 provides for a one-time election at the end of Phase A-1 --  
17 1-A, excuse me -- for the working interest to withdraw from  
18 the agreement and the unit by transferring their oil and  
19 gas rights, exclusive of royalty interest, together with  
20 its interest in all unit equipment and all wells used in  
21 unit operations.

22 Q. And the details of how this works are set out in  
23 the agreement?

24 A. Yes, they are.

25 Q. And this was requested by Nearburg Exploration?

1 A. Nearburg, yes it was.

2 Q. And Nearburg Exploration, after this withdrawal  
3 provision was included, has in fact ratified the unit  
4 agreement --

5 A. Yes, they have.

6 Q. -- is that correct?

7 Are you ready to go to Exhibit Number 6?

8 A. Yes.

9 Q. Would you do this and would you, using this  
10 exhibit, briefly summarize for Mr. Stogner your efforts to  
11 obtain voluntary participation in the unit and the proposed  
12 waterflood project?

13 A. Yes, I will. Exhibit 6 is my outline time frame  
14 of the events that have taken place throughout the  
15 initiation of this project.

16 Back in May of 2003 we met with the Bureau of  
17 Land Management just as a preliminary introduction to this  
18 project, what we were looking at, the scope of this  
19 project, and other defining characters.

20 On May 22nd, we held a meeting here in Santa Fe  
21 at the State Land Office reviewing the same project, a  
22 question-and-answer period just to lay it on the table to  
23 inform them of what we were looking at.

24 On May 28th, an informal meeting was held with  
25 Nearburg to go over again the facts and figures of what we

1 were proposing to put together in this secondary recovery  
2 unit.

3 On August 5th, all interest owners were mailed a  
4 preliminary package to the North Dagger Draw-Upper  
5 Pennsylvanian Unit, were sent a short questionnaire asking  
6 for input, criticism, support of the project, also inviting  
7 them to attend an informational meeting to be held at Yates  
8 Petroleum on August 28th, 2003.

9 And then on August 28th, 2003, this meeting was  
10 held at Yates Petroleum Corporation.

11 On October 30th, 2003, the original proposal  
12 package was certified mail to all interest owners within  
13 the unit.

14 On February 10th, updates were mailed to all  
15 interest owners within the unit, again by certified mail.

16 In addition to all of the written correspondence  
17 and meetings, we have fielded and responded to several  
18 phone conversations and personal contact.

19 Q. And it has fallen to you to secure the approval  
20 of the BLM, the State Land Office, and obtain ratifications  
21 of the documents, as submitted in February --

22 A. Yes.

23 Q. -- is that right?

24 A. Yes, that's correct.

25 Q. What is Exhibit Number 7?

1           A.   Exhibit Number 7 is a letter from the Bureau of  
2 Land Management approving the unit as an area logically  
3 suited for development under a unit plan.

4           Q.   And Exhibit Number 8?

5           A.   Exhibit Number 8 is a letter from the  
6 Commissioner of Public Lands, again for approval of this  
7 unit.

8           Q.   And this is their preliminary approval with the  
9 letter?

10          A.   Yes.

11          Q.   When did you last meet with the Commissioner of  
12 Public Lands?

13          A.   I met with them yesterday.

14          Q.   And yesterday you reviewed the schedules and were  
15 able to respond to many of the questions that are contained  
16 in the approval --

17          A.   Yes.

18          Q.   -- permit approval; is that right?

19          A.   Yes, that's correct.

20          Q.   Let's go to Exhibit Number 9.  What is Exhibit 9?

21          A.   Exhibit Number 9 is the working interest owner  
22 spreadsheet that I have built.  It contains a list of all  
23 working interest owners within the unit, their percentage  
24 of the unit participation.  We have kept record of all  
25 mailings going out, and we've designated those that we

1 have, in fact, received notification of certified delivery  
2 for both the original package and for the updates mailed in  
3 February.

4 This spreadsheet also shows those who have  
5 ratified the unit with their approval percentage.

6 Q. Those shaded in yellow have actually ratified; is  
7 that right?

8 A. Yes, those represent all the ratified working  
9 interest owners.

10 Q. What percentage of the working interest ownership  
11 is presently committed to the unit plan?

12 A. If you will refer to the bottom of page 2, in the  
13 blue highlighted box we currently have 93.416226 percent  
14 approval.

15 Q. And you are continuing to pursue negotiations  
16 with those interest owners who are not shaded; is that  
17 right?

18 A. That's correct.

19 Q. Let's go to the next exhibit, Exhibit Number 10.  
20 Would you identify and review this, please?

21 A. Yes, Exhibit Number 10 is very similar to Exhibit  
22 Number 9. However, this identifies the royalty and  
23 overriding royalty owners within the unit, set up in the  
24 same manner. The yellow-highlighted have all ratified and  
25 approved the unit, tracked all the certified mailings.

1 Q. When we look at this list, what percentage is  
2 ratified if you do not include the lands of the federal  
3 government and the State of New Mexico?

4 A. Okay, if you'll refer to page 5 of this exhibit,  
5 in the blue-highlighted box at the bottom we currently have  
6 47.4312 percent of the royalty interest approval and  
7 48.4588 percent of the overriding approval.

8 Q. If you -- When you add state and federal lands,  
9 what percentage do you have of the royalty interest or the  
10 non-cost-bearing interest ratifying the proposed unit plan?

11 A. 88.7539 percent.

12 Q. Do you believe you've done all that you  
13 reasonably can at this point to obtain voluntary commitment  
14 to this unit plan?

15 A. Yes, sir, I have.

16 Q. Have you made a good-faith effort to contact each  
17 of those interest owners who has not ratified and obtain  
18 their participation?

19 A. Yes, sir.

20 Q. And you will continue those negotiations?

21 A. That's correct.

22 Q. What are Yates Exhibits 11 and 12?

23 A. Exhibit 11 is an affidavit prepared by William  
24 Carr in the Application of Yates Petroleum Corporation for  
25 statutory unitization of the North Dagger Draw-Upper

1     Pennsylvanian Unit Area.

2             Q.     Does this confirm that notice of today's hearing  
3     and the Application was mailed to each of the individuals  
4     identified in the affidavit?

5             A.     Yes, it does.

6             Q.     And is Exhibit Number 12 a similar affidavit for  
7     the waterflood portion of the case?

8             A.     Yes, it is.

9             Q.     Who was notified of the statutory unitization  
10    hearing?

11            A.     All working interest owners and non-cost-bearing  
12    interest owners within the unit.

13            Q.     And what about the notification on the waterflood  
14    project? Who was notified?

15            A.     All leasehold operators within one-half mile of  
16    each of the five proposed injection wells, and the owners  
17    of the surface for each injection well.

18            Q.     Ms. Vierra, were Exhibits 1 through 12 prepared  
19    by you or compiled under your direction and supervision?

20            A.     Yes, they were.

21            Q.     Can you testify as to their accuracy?

22            A.     Yes, sir.

23            MR. CARR: Mr. Stogner, at this time we move the  
24    admission into evidence of Yates Exhibits 1 through 12.

25            EXAMINER STOGNER: Exhibits 1 through 12 will be



1 admitted into evidence at this time.

2 MR. CARR: Mr. Stogner, I have copies of the  
3 return receipts on our certified mailings if you want them  
4 for the file. The affidavit does identify each of those  
5 parties. It's whatever you prefer, whether you --

6 EXAMINER STOGNER: Do you have those with you  
7 today?

8 MR. CARR: Yes, I do.

9 EXAMINER STOGNER: Why don't we go ahead and I  
10 will take those from you and make that a part of the  
11 record? I'll just make it a part of the record. I don't  
12 think it will be necessary to make it an exhibit.

13 MR. CARR: The first pages contain the green  
14 cards. There are two envelopes that were returned because  
15 they were undeliverable.

16 And that concludes our direct testimony of Ms.  
17 Vierra.

18 EXAMINATION

19 BY EXAMINER STOGNER:

20 Q. Ms. Vierra, I'm going to go back -- and you  
21 talked about this earlier. This was Section 32 in which  
22 Mr. Carr pointed out. This is some additional language for  
23 expansions?

24 A. Yes.

25 Q. And again, this is what would be required of the

1 current interest in the unit, before any additional  
2 expansion, additional acreage would be taken; is this  
3 correct?

4 A. That is correct.

5 Q. Now when I look at Section 4 under "Expansion" on  
6 page 3, that still shows 75 percent. What --

7 A. Yes. If you'll --

8 Q. Please explain, yeah --

9 A. If you'll refer, then, to page 10 under Section  
10 22 [sic], "Nonjoinder and Subsequent Joinder", the bottom  
11 paragraph on that page outlines where the 80-percent  
12 approval comes in.

13 Q. Now, what does this language normally include or  
14 have in it, in this Section 32 for "Nonjoinder and  
15 Subsequent Joinder"? How does this differ?

16 A. Just a higher percentage.

17 Q. And what would it normally be? Seventy-five  
18 percent?

19 A. I believe so, sir.

20 MR. CARR: And Mr. Stogner, the reason for that  
21 was that the Yates Companies have a large interest, and  
22 this was increased so that there would be a guarantee that  
23 other interest owners would be interested in expanding the  
24 unit area before additional lands were taken in. It's just  
25 an extra check that. It was requested and included.

1 Q. (By Examiner Stogner) In referring to this Land  
2 Commissioner's letter -- this is marked Exhibit Number 8 --  
3 I understand you met with them yesterday?

4 A. Yes, I did.

5 Q. And you provided everything in which they had  
6 asked for. I believe there was nine items; is that  
7 correct?

8 A. To be honest with you, this is the first time  
9 I've seen this document, as we just received it late last  
10 night. But we did have conversation concerning all aspects  
11 of their letter, yes, and some have already been resolved  
12 at this time and corrections will be made, and others will  
13 be -- such as the several com agreements that are already  
14 in existence, those will be addressed.

15 Q. In referring to Exhibits 9 and 10 and the ones  
16 that have not ratified to date -- and this is as of right  
17 now, I'm assuming, or last night? --

18 A. The 1st, Monday.

19 Q. Monday. -- are you anticipating or have you  
20 talked to other people that would indicate that something's  
21 in the mail?

22 A. We have all documents, not with me here today.  
23 Some of these have been undeliverable, some with no  
24 forwarding addresses. We have in several cases attempted  
25 delivery twice. Historically, some of the interest owners,

1 we have a very difficult time in getting a response of any  
2 kind in any matter.

3 Q. Okay, in referring to Exhibit Number 10, halfway  
4 down the Commissioner of Public Lands is shown as a non-  
5 party. Do you see that down there between Clark Coll and  
6 Tom Cone?

7 A. Yes, I do. At the time that this exhibit was put  
8 together on Monday, we did not have that in hand.

9 EXAMINER STOGNER: Okay. A lot of information to  
10 digest here, but at this time I have no other questions.  
11 But before we -- You have two other witnesses?

12 MR. CARR: Two additional witnesses, yes, sir.

13 EXAMINER STOGNER: Let's take a 10-minute recess  
14 at this time.

15 (Thereupon, a recess was taken at 9:36 a.m.)

16 (The following proceedings had at 9:55 a.m.)

17 EXAMINER STOGNER: This hearing will come to  
18 order.

19 I have no other questions for Ms. Vierra. You  
20 may be excused.

21 Mr. Carr?

22 MR. CARR: Mr. Stogner, at this time we call John  
23 Humphrey, and we'd request the record reflect that Mr.  
24 Humphrey was previously sworn, that his qualifications as  
25 an expert in petroleum geology have been accepted and made

1 a matter of record.

2 EXAMINER STOGNER: So noted.

3 JOHN F. HUMPHREY,

4 the witness herein, having been previously duly sworn upon  
5 his oath, was examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MR. CARR:

8 Q. Mr. Humphrey, are you familiar with the  
9 Applications filed in each of these cases?

10 A. Yes, I am.

11 Q. Have you made a geological study of the portion  
12 of the North Dagger Draw-Upper Pennsylvanian Pool which is  
13 the subject of this case?

14 A. Yes, I have, and I've worked the Dagger Draw-  
15 Indian Basin area since 1997.

16 Q. Are you prepared to review the results of your  
17 work with Mr. Stogner?

18 A. Yes.

19 Q. Mr. Humphrey, let's go to what has been marked  
20 for identification as Yates Petroleum Corporation Exhibit  
21 13. Would you identify and review this for the Examiner?

22 A. Exhibit 13 is the type log that was used in the  
23 proposed unit agreement. It's basically gamma-ray  
24 porosity, I suppose the gamma-ray, dual lateral log in the  
25 Yates Petroleum Corporation Vann "APD" Number 1 well. This

1 is located 660 feet from the north and 660 from the west of  
2 Section 21, 19 South, 25 East, Eddy County, New Mexico.

3 The vertical limits of the unitized formation  
4 included within the proposed unit area extends from an  
5 upper limit described on the type log. It's the top of the  
6 Canyon carbonate formation, at a depth on the type log of  
7 7680 feet to a lower limit at the base of the upper Canyon  
8 pay at a depth of 8076 feet, as shown on the type log.

9 Q. Now, Mr. Humphrey, this is the area that is  
10 subject to this unit agreement, correct?

11 A. That's correct.

12 Q. There are several deeper wells in the area that  
13 penetrate this interval that are completed currently in the  
14 Morrow; is that right?

15 A. That's correct.

16 Q. We are not attempting to unitize the Morrow?

17 A. No, we're not.

18 Q. And those wells will be governed by their  
19 respective joint operating agreements?

20 A. That's correct, Mr. Carr.

21 Q. Has the portion of the reservoir which you  
22 propose to unitize been recently defined by development?

23 A. I believe it has.

24 Q. Could you generally describe for Mr. Stogner the  
25 nature of the upper Pennsylvanian reservoir in this area?

1           A.    Upper Pennsylvanian Canyon dolomite was deposited  
2   on a shallow carbonate ramp.  It's basically a carbonate  
3   buildup.  The porosity types we see in the upper Penn are  
4   vuggy -- quite a bit of vuggy porosity, intercrystalline  
5   porosity, with some minor diagenetic fracturing in it.  And  
6   due to the nature, which is pretty common to most upper  
7   Pennsylvanian reservoirs in New Mexico and Texas too, it  
8   should impact the sweep of the proposed waterflood project,  
9   and most people have been quite successful in waterflooding  
10  the upper Pennsylvanian reservoirs.

11           Q.    Let's go to Exhibit Number 14, the structure map  
12  on the top of the upper Penn dolomite.  Would you review  
13  this for Mr. Stogner?

14           A.    Again, Yates Exhibit 14 is a structure map on the  
15  top of the upper Penn dolomite.  The basic things you can  
16  glean from this is, structure plunges to the northeast in  
17  this particular case.  All wells within the unit are above  
18  the established oil-water contact, which is at a subsea of  
19  4380 subsea.  And additionally on the structure map, Mr.  
20  Examiner, there's a cross-section A-A' that cuts across the  
21  proposed unit area, which we'll go over in the exhibit  
22  after next.

23           Q.    Okay.  Let's go to the isopach map, Exhibit 15.

24           A.    Exhibit 15 is a net-pay isopach of the upper  
25  Pennsylvanian dolomite.  The cutoff is a 4-percent porosity

1 cutoff above the oil-water contact. Again, the oil-water  
2 contact has been established at approximately 4380 subsea.  
3 As you can see, Mr. Examiner, all lands in the unit have  
4 pay. The entire unitized area, I believe, should  
5 contribute reserves to the unit, and I believe it's an area  
6 suited for a secondary recovery project. Your pay  
7 thickness varies from 40 to 50 feet to a little over 200  
8 feet under the unitized lands.


9 Q. Again, we have the trace for the cross-section --

10 A. That's correct, A-A'.

11 Q. Let's go to that cross-section, which is Yates  
12 Exhibit 16.

13 A. Yates Exhibit 16 is a structural cross-section  
14 cutting across the North Dagger Draw proposed unit area.  
15 The target zone for the waterflood, Mr. Examiner, again is  
16 the upper Pennsylvanian or Canyon dolomite.

17 As you go -- Basically what I'm trying to show is  
18 some of the limits and the logical -- basically the logic  
19 behind the unit boundaries. As you go to the northwest you  
20 lose the dolomite and you lose your reservoir. As you go  
21 to the southeast, you go below the oil-water contact at  
22 some point, and that's basically what I'm trying to  
23 illustrate with the cross-section.

24  Q. Mr. Humphrey, in your opinion can the portion of  
25 the pool that's included in the proposed unit area be



1 efficiently and effectively operated under a unit plan of  
2 development?

3 A. I believe it can, Mr. Carr.

4 Q. And will all of the acreage in the unit area, in  
5 your opinion, contribute to the reserves that will be  
6 obtained through this secondary recovery operation?

7 A. I believe it will.

8 Q. Were Exhibits 13 through 16 prepared by you?

9 A. Yes, they were.

10 MR. CARR: Mr. Stogner, at this time we move the  
11 admission into evidence of Yates Petroleum Corporation  
12 Exhibits 13 through 16.

13 EXAMINER STOGNER: Exhibits 13 through 16 will be  
14 admitted into evidence.

15 MR. CARR: And that concludes my direct  
16 examination of Mr. Humphrey.

17 EXAMINATION

18 BY EXAMINER STOGNER:

19 Q. Mr. Humphrey, again, I'm referring to Exhibit  
20 Number 13 and Exhibit 16. What you're showing on Exhibit  
21 13 is the proposed unitized interval --

22 A. Yes.

23 Q. -- in this well from 7680 to 8076?

24 A. Uh-huh.

25 Q. What portion is the actual injection to take

1 place? Is it going to be high in this interval or  
2 throughout the interval or low?

3 A. I did not mark, unfortunately, the oil-water  
4 contact on this particular well, but basically the entire  
5 interval above the oil-water contact. And I could  
6 calculate that and get that information to you. I don't  
7 have an elevation for this particular well, so I can't  
8 calculate where it would fall on this log, but basically  
9 we're going to be injecting. The secondary recovery  
10 project is basically above the oil-water contact within the  
11 dolomite. And I'm guessing from the perforations it's  
12 probably a little bit below that.

13 Q. You had mentioned -- again, the target zone, you  
14 said, was the upper Penn dolomite. But what did you say  
15 was the -- above or below the base of the Canyon dolomite,  
16 is the injection interval?

17 A. It can be both, just depending on where the oil-  
18 water contact falls, Mr. Examiner.

19 Q. So the base of the Canyon really didn't matter in  
20 this instance?

21 A. It just matters to pin it down stratigraphically  
22 so you can define the interval, no matter where you're at  
23 within the proposed unit.

24 Q. In referring to Exhibit Number 17, are these  
25 perforations in which you're showing in the wells with the

1 black, heavy dark black line, in the wellbore portion?

2 A. Yes.

3 Q. Now, it looks to me like you're highlighting some  
4 sort of lettering here, and what does that say? And when  
5 I'm -- I'm looking at --

6 A. Oh, the -- Yeah, that's just a function of the  
7 computer program. That's just telling you -- My glasses  
8 aren't quite even that good. It says the top of the  
9 Cisco/Canyon dolomite, is the text at the -- You see where  
10 the top of the shading for the dolomite is? Is that where  
11 you're reading?

12 Q. Yes, the --

13 A. Yeah, that says Cisco/Canyon dolomite.

14 Q. At the top of the pink area?

15 A. Yes, that's just a formation. It's just text.

16 Q. And then at the top of the blue-shaded area  
17 there's another marking. It looks like Cisco/Canyon?

18 A. That's correct, that would be the actual top of  
19 the carbonate.

20 Q. Okay.

21 A. Again, this is a structural cross-section.

22 Q. How have perforations in the newly drilled well  
23 in this pool been determined after a well is drilled?  
24 Where has Yates -- and what criteria has Yates utilized to  
25 actually pick which interval within that upper

1     Pennsylvanian dolomite to be perforated?

2           A.     Well, recently -- We haven't drilled a newer well  
3     recently, but there have been a lot of drill stem testing  
4     that went on during the development of the field, and the  
5     oil-water contact was fairly -- you know, it was  
6     established with a great -- you know, a fair deal of  
7     certainty. So basically, you know, as time went on, at  
8     least when I recommend perforations I basically want to  
9     perforate everything above the contact. Unless you have a  
10    highly porous zone that goes across the contact and you're  
11    worried about pulling excessive water.

12          Q.     Because when I look at Exhibit Number 16, I kind  
13    of see the whole gamut --

14          A.     Uh-huh.

15          Q.     -- starting over there on the A side or the  
16    northwestern side, it looks like Conoco perforated that  
17    whole dolomite interval?

18          A.     Yes, sir.

19          Q.     And then the next well is the Yates well, and --  
20    a good chunk of it, it looks like two-thirds of it. And  
21    then I go to the third well over that's penetrating, or  
22    that's perforated in this area --

23          A.     Uh-huh.

24          Q.     -- it looks like it was concentrated.

25          A.     And that was probably due just to the porosity.

1 It's kind of hard to see on this scale, but in some cases  
2 that's where your porosity is developed in this particular  
3 case, and that's where the perforations were done.

4 EXAMINER STOGNER: Okay, I have no other  
5 questions of Mr. Humphrey at this time. I may subsequent  
6 to your final --

7 MR. CARR: Yes.

8 EXAMINER STOGNER: -- witness today.

9 MR. CARR: Okay, he will be available.

10 EXAMINER STOGNER: At this time you may be  
11 excused.

12 THE WITNESS: Okay, thank you.

13 MR. CARR: Mr. Stogner, at this time we call  
14 George Freeman. He's our petroleum engineer.

15 GEORGE H. FREEMAN,  
16 the witness herein, after having been first duly sworn upon  
17 his oath, was examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. CARR:

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

21 A. George Freeman.

22 Q. Mr. Freeman, where do you reside?

23 A. In Artesia, New Mexico.

24 Q. By whom are you employed?

25 A. Yates Petroleum Corporation.

1 Q. And what is your position with Yates Petroleum  
2 Corporation?

3 A. I'm reservoir engineering supervisor.

4 Q. Have you previously testified before the Oil  
5 Conservation Division?

6 A. Yes.

7 Q. At the time of that testimony were your  
8 credentials as a reservoir engineer accepted and made a  
9 matter of record?

10 A. Yes, they were.

11 Q. Are you familiar with the Applications filed in  
12 each of these consolidated cases?

13 A. Yes, sir.

14 Q. Have you made an engineering study of the area  
15 that is involved in this case?

16 A. Yes, and I've supervised the consultant study  
17 also.

18 MR. CARR: Are the witness's qualifications  
19 acceptable?

20 EXAMINER STOGNER: They are.

21 Q. (By Mr. Carr) Mr. Freeman, are you familiar with  
22 the New Mexico Statutory Unitization Act?

23 A. Yes.

24 Q. Have you prepared exhibits for presentation here  
25 today?

1 A. Yes, I have.

2 Q. Let's go to what has been marked Yates Exhibit  
3 Number 17. Would you identify that and review that for Mr.  
4 Stogner?

5 A. Yeah, this is a map of the proposed unit area  
6 which shows the current status of all the wells in this  
7 area, approximately 103 current producing wells and other  
8 wells that are TA'd and plugged and abandoned.

9 It shows all of the proposed injection wells that  
10 are marked as blue triangles. There are 21 proposed  
11 injection wells in the unit area. Five of these wells  
12 we're asking for authority to inject in today.

13 Q. And then additional wells you would add by filing  
14 administrative applications pursuant to the Section 700  
15 rules of the Division?

16 A. Yes, that's right.

17 Q. There are several -- maybe four producing wells  
18 indicated with a green circle on this plat. Do you see  
19 those?

20 A. Yes, those are wells that are currently producing  
21 from the Morrow formation. These are wells that could  
22 possibly be incorporated into the unit, however they will  
23 not be until the Morrow reserves have been depleted, and  
24 this is governed by other joint operating agreements.

25 Q. And these are wells, some of them, in which

1 Marbob has an interest; is that correct?

2 A. Yes, that's true.

3 Q. And they're not being considered at this time for  
4 unitizing and won't be until the Morrow has been, in fact,  
5 depleted?

6 A. That's right.

7 Q. Are you proposing to drill any additional wells  
8 in the unit area at this time?

9 A. No, there is a possibility -- or we would want to  
10 consider it in the future, possibly, but at this time we  
11 are not planning to drill additional wells.

12 Q. Because the acreage really is fully developed at  
13 this time; is that what you're saying?

14 A. Yes, that's correct.

15 Q. And what you've shown with all of the blue  
16 triangles is where you ultimately will get with full-scale  
17 waterflood operations?

18 A. Yes.

19 Q. What are the pipelines, it looks like, the  
20 injection lines that are shown? Are those the --

21 A. Yeah, those are the plans for the injection lines  
22 for the first group of wells, first group of injection  
23 wells that we call Phase 1. There's a boundary shown in  
24 the unit area in red that separates the Phase 1 area from  
25 the Phase 2, and this is just an operational plan that we



1 would add the wells over time, starting out with five  
2 injection wells in Phase 1A, increasing that number to 13  
3 injection wells in Phase 1B, and adding the remaining eight  
4 wells in Phase 2 later.

5 Q. You're going to start with Phase 1 at this time;  
6 is that right?

7 A. That's correct.

8 Q. About how far behind the Phase 1 development do  
9 you anticipate Phase 2 actually being committed to the  
10 waterflood project?

11 A. In the neighborhood of 18 months.

12 Q. Let's go to Exhibit 18, the production data on  
13 the unit area.

14 A. Yeah, this is a record of historical primary  
15 production by month for the unit area, and again it also  
16 shows our forecast for both primary production under the  
17 current configuration and then the incremental production  
18 and total production as a result of waterflooding.

19 Q. Let's talk about remaining primary recovery.  
20 What is the anticipated gross oil volume you would  
21 anticipate recovering?

22 A. As of January 1st of 2004, approximately 200,000  
23 barrels.

24 Q. And have you been able to set a cash value on  
25 that production?

1 A. We estimate \$6.7 million.

2 Q. If -- We also have the proposed case. What would  
3 happen if waterflood operations are implemented throughout  
4 the unit area? What volume of oil do you anticipate being  
5 able to recover through waterflood operations?

6 A. Estimate about 2.5 million barrels incremental.

7 Q. And what's the cash value of that?

8 A. Approximately \$17 million.

9 Q. It shows the increase in the production that can  
10 result through the implementation of the waterflood; is  
11 that correct?

12 A. Yes.

13 Q. And it shows the additional value of that  
14 production?

15 A. Well, that's not shown on this exhibit.

16 Q. That's right, but that is, when you apply  
17 estimated prices to that volume, what you get?

18 A. That's correct.

19 Q. What is Exhibit 19?

20 A. 19 shows a production graph of the same data. It  
21 shows the primary history since 1987 for the unit area and  
22 shows the forecast starting at the beginning of 2004 of  
23 what would happen under waterflood. And it shows that we  
24 would increase -- currently, the rate is about 350 barrels  
25 of oil per day, and that would increase to something like

1 1500 barrels per day.

2 Q. Without unitized management operation and further  
3 development in the unit area, would this additional  
4 recovery be wasted?

5 A. Yes, the field is declining fairly rapidly and  
6 will approach the economic limit for primary operations  
7 soon. And if waterflooding is not started, then we will be  
8 plugging wells and reserves will be lost.

9 Q. What is the basis for the participation formula  
10 in the unit agreement?

11 A. It is 70 percent, based on area, and 30 percent  
12 on primary reserves.

13 Q. And what data are you using in that primary-  
14 reserve figure?

15 A. As of January 1st, 2003.

16 Q. Why were these parameters selected?

17 A. Well, the 30 percent, based on remaining primary  
18 reserves, is approximately the fraction of the value of the  
19 project that's represented by the primary reserves, and it  
20 reimburses owners who commit these primary reserves to the  
21 unit. Seventy percent is the value of the waterflood that  
22 is allocated based on acreage. We use acreage as a  
23 parameter for that.

24 Because of the complex nature of the Dagger Draw  
25 unit, which Mr. Humphrey referred to, it's very difficult

1 to correlate the future production of the waterflood with  
2 other parameters that are often used, such as cumulative  
3 oil recovery or net porosity thickness.

4 Q. And so because of the porosity, because of the  
5 water drive, this parameter, the acreage parameter, seems  
6 to be the best to accurately allocate back to the interest  
7 owners their fair share?

8 A. Yes, this would be the most equitable way to  
9 allocate the reserves.

10 Q. If this unit is approved and waterflood  
11 operations commenced in the unit area, will this benefit  
12 all working interest owners and royalty interest owners in  
13 the area affected by this Application?

14 A. Yes, everybody would benefit from increased  
15 recovery reserves and increased cash flow.

16 Q. Let's go to the Form C-108 that has been filed in  
17 this case, your Application for Authorization to Inject.  
18 It's been marked Exhibit 20.

19 A. Yeah, this is a completed C-108 for the first  
20 five wells that we want to inject into, together with all  
21 the required information.

22 Q. Is this an expansion of an existing project?

23 A. No.

24 Q. We're looking only at five wells?

25 A. Yes, at this time that we hope to -- I mean, we

1 will ask for authority to commit additional wells to  
2 injection in the future.

3 Q. We've numbered the pages on this. There is a  
4 plat or a Midland map company map that's page 20 in the  
5 exhibit. Would you turn to that, please?

6 A. Yes.

7 Q. What does this show?

8 A. Okay, the first five proposed injection wells are  
9 shown on this map highlighted in green. The leases and  
10 wells within a two-mile radius of each of these wells are  
11 shown on the map, identified there, and the area within a  
12 one-half-mile radius of each of the wells, which represents  
13 the study area -- the area of review for each of these  
14 wells in the C-108 --

15 Q. Does this --

16 A. -- is outlined.

17 Q. Does this exhibit contain all the information  
18 required by the Oil Conservation Division for each of the  
19 wells in any of these five areas of review, wells that  
20 penetrate the injection interval?

21 A. Yes.

22 Q. And is that information set out in tabular form  
23 on pages 21 through 24 of this exhibit?

24 A. Yes, we have data on all of the wells within the  
25 area of review of these proposed five injection wells, and

1 it shows the name and location of each well, the operator,  
2 type of well generally, whether it's an oil producer or if  
3 it's plugged or abandoned, the spud date, total depth and  
4 producing zone, perforations and the completion  
5 information, the casing record.

6 Q. Are there plugged and abandoned wells within the  
7 areas of review?

8 A. Yes, there are four, and there are wellbore  
9 schematics for these four wells found on pages 25 through  
10 28, which show that they have been properly plugged.

11 Q. Are they plugged so as to prevent the migration  
12 of injection fluids from the injection interval?

13 A. Yes.

14 Q. Have you reviewed the data available on all the  
15 wells within the areas of review for the five wells we're  
16 discussing here today and satisfied yourself that there's  
17 no remedial work on any of these wells that's necessary to  
18 enable Yates to safely operate this project?

19 A. Yes, I have.

20 Q. What injection volumes do you propose?

21 A. We're proposing average injection volume of 2500  
22 barrels of water per day per injection well, or 12,500  
23 barrels per day for the five proposed wells.

24 Q. And what is the maximum rate?

25 A. And the maximum rate, up to 5000 barrels of water

1 per day per well.

2 Q. What is the source of the water you propose to  
3 inject?

4 A. The water is produced water from the Canyon  
5 formation from North and South Dagger Draw and Indian Basin  
6 reservoirs.

7 Q. Will you be injecting any fresh water?

8 A. No, no fresh water.

9 Q. You are now disposing substantial volumes of  
10 water in the area, are you not?

11 A. Yes, Yates Petroleum is disposing of  
12 approximately 75,000 barrels per day in the Dagger Draw  
13 area.

14 Q. And this will be the source of the water you use  
15 for the waterflood project?

16 A. Yes, that's right.

17 Q. Will this be a closed system?

18 A. Yes, closed.

19 Q. What injection pressure does Yates propose to  
20 use?

21 A. We propose a maximum injection pressure of 1520  
22 p.s.i.g., but expect that we will have a vacuum at the  
23 surface of these wells for quite some time, while we're  
24 injecting into them.

25 Q. In any event, will Yates limit the injection

1 pressure to .2 pound per foot of depth to the top of the  
2 injection interval, unless a higher pressure is authorized  
3 following Division-witnessed step-rate tests?

4 A. Yes.

5 Q. What is the current status of each of the five  
6 wells you're proposing to use for injection?

7 A. These five wells are either producing at marginal  
8 rates or temporarily abandoned. They're currently making  
9 approximately 200 barrels of oil per month and 1900 MCF per  
10 month, all together.

11 Q. How will Yates monitor the injection wells to  
12 ensure the integrity of the wellbore?

13 A. There will be pressure gauges on the wellhead,  
14 and the annular space will be filled with an inert packer  
15 fluid.

16 Q. In your opinion, will the proposed injection in  
17 these wells pose any threat to underground source of  
18 drinking water?

19 A. No.

20 Q. Are there freshwater zones in the area?

21 A. Yes, there's a quaternary alluvium formation that  
22 produces water down to a depth of 390 feet.

23 Q. And the injection is substantially below that?

24 A. Yes. Right, no injection would be in those  
25 formations.



1 Q. Are there freshwater wells within one mile of any  
2 of the proposed injection wells?

3 A. Yes, there are, there are four freshwater wells.

4 Q. Are they identified --

5 A. Yes, on Exhibit 20 there's a map which  
6 identifies --

7 Q. Is that on page 29?

8 A. Yes. Yes, page 29. And the four locations of  
9 the freshwater wells are highlighted in green and numbered  
10 1 through 4.

11 Q. Does the Exhibit also contain water analyses on  
12 each of the wells?

13 A. Yes, on the eight pages following this plat there  
14 are analyses on each of the water samples from these four  
15 freshwater wells.

16 Q. Are the wells in the project area completed and  
17 cased so as to prevent problems with any of the water  
18 wells?

19 A. Yes.

20 Q. Have you examined all available geologic and  
21 engineering data on this reservoir, and as a result of that  
22 examination have you found any evidence of open faults or  
23 hydrologic connections between the injection interval and  
24 any underground source of drinking water?

25 A. Yes, I've examined the data, and no, I have not

1 found any evidence of faults or hydrologic connections.

2 Q. Let's go to Exhibit Number 21. What is this?

3 A. This is an application for the recovered oil tax  
4 rate for the enhanced oil recovery project.

5 Q. Does this application contain all information  
6 required by the Division and meet all the requirements of  
7 their rules?

8 A. Yes, all the required data is attached.

9 Q. What are the estimated additional capital costs  
10 to be incurred in this project?

11 A. Well, \$1.34 million for additional facilities,  
12 and total cost -- a total investment of \$7.3 million.

13 Q. How much additional production do you expect to  
14 obtain from the project area?

15 A. About 2.5 million barrels of oil and 4.4 BCF of  
16 gas.

17 Q. And what is the total value of this production?

18 A. Approximately \$73 million, based on \$25 per  
19 barrel for oil and \$4.16 per MCF.

20 Q. Does Yates Exhibit 21, the production graph  
21 included, show the production history and the production  
22 forecast for oil, gas and water from the project area?

23 A. Yes, this is the same production plot that we  
24 looked at before, and it shows the history since 1987 and  
25 forecast through the waterflood.

1 Q. Is unitized management and further operation of  
2 the portion of the pool involved in this Application  
3 necessary to effectively carry on the secondary recovery  
4 operations?

5 A. Yes, it is.

6 Q. Will unitized operation prevent the waste of  
7 hydrocarbons?

8 A. Yes, and it will...

9 Q. And will approval of the Application and the  
10 implementation of this waterflood project be in the best  
11 interest of conservation and the protection of correlative  
12 rights?

13 A. Yes, it will.

14 Q. Were Exhibits 17 through 21 prepared by you or  
15 compiled under your direction?

16 A. Yes, they were.

17 MR. CARR: Mr. Stogner, at this time we'd move  
18 the admission into evidence of Yates Petroleum Corporation  
19 Exhibits 17 through 21.

20 EXAMINER STOGNER: I do not seem to be able to  
21 find my Exhibit 21.

22 Exhibits -- What did you say, 16 --

23 MR. CARR: 17 through 21.

24 EXAMINER STOGNER: Exhibits 17 through 21 will be  
25 admitted into evidence at this time.

## EXAMINATION

BY EXAMINER STOGNER:

Q. Okay, I'm referring now to Exhibit Number 19. Is it my understanding that the -- the payout factor, 70 percent, is based on acreage, and the other 30 percent is based on primary? And that's as of January 1st, 2003?

A. Yes.

Q. Okay. And then when I look at this map I see that there's a heavy black line that looks like it corresponds to that date; is that correct?

A. That's correct.

Q. Okay. Now, you've given me in Exhibits 18 and 19 primary production. How many wells does this represent? Is it a floating number --

A. Approximately 115, and yes -- well, there's -- the number of active wells changes from time to time, but it's approximately 115 historical wells in the area.

Q. And right now you say there's currently 103; is that correct?

A. Yes.

Q. So anywhere between 115 and 103, at least in the latter stages. Perhaps some of the early numbers might represent a smaller number?

A. Yes.

Q. What is the average daily production for a well

1 out here in this pool --

2 A. Well --

3 Q. -- in your area?

4 A. -- that would be approximately 3 1/2 barrels a  
5 day. We're making about 350 barrels a day out of all of  
6 them right now.

7 Q. What's your better ones showing?

8 A. I haven't looked at that lately. I think the  
9 better ones are probably down to approximately 50 barrels a  
10 day.

11 Q. And would that be indicative of a new well, one  
12 of these high --

13 A. Yes, there were a couple of wells drilled in  
14 about 2000 that were new wells with horizontal sections,  
15 and they started out producing pretty well and have  
16 declined rapidly since then.

17 Q. Now, in Phase 1 and the first five injection  
18 wells, that's all over on the west side. What is the  
19 average well over here? Do you have any of these  
20 horizontal wells, any of these good wells, these 50-  
21 barrels? What's --

22 A. Those two wells were in Section 21 on the east  
23 side.

24 Q. Oh, that's on the east side?

25 A. Yes.

1 Q. But your initial injection is going to be over on  
2 that west side?

3 A. That's right. We felt like the waterflood might  
4 respond best on the west side.

5 Q. Okay. Now, earlier on when the geologist was  
6 talking, I did notice some -- what appears to be horizontal  
7 wells, especially over on the east side. They were shown  
8 on some of the maps as a red line that connect a red hollow  
9 dot and a red solid dot --

10 A. Yes, I believe the hollow dot would be the  
11 surface location of the well, and then the solid dot would  
12 be the bottomhole location.

13 MR. HUMPHREY: That's correct.

14 Q. (By Examiner Stogner) So it looks like you have  
15 about five or six horizontal wells in the unit area, over  
16 on the west side? Is that your memory?

17 A. Two, four -- Six, I believe.

18 Q. About six.

19 MR. HUMPHREY: On the east side.

20 Q. (By Examiner Stogner) Now, in your Phase 2, are  
21 any of these horizontal wells going to be injectors?

22 A. No, they will not.

23 Q. Okay. I'm sure this information shows up on your  
24 data but I've got a lot of information here to look.

25 A. Yes.

1 Q. On the five injection wells, are there any new  
2 perforations, or are you just going to go into the  
3 existing?

4 A. No, we plan to go in and work them over and put  
5 in new perforations, and we'll open up the whole section.

6 Q. And that is shown in your diagrams, I would  
7 assume.

8 A. Yes, there's a schematic showing before and after  
9 on the injection wells.

10 Q. Okay. Now, we were -- I was discussing with your  
11 geologist earlier whenever I was looking at his cross-  
12 section, he depicted the dolomite as that pink interval.  
13 And these perforations, are they going to cover the whole  
14 dolomite section, or are they going to be concentrated in  
15 the middle or up toward the top?

16 A. No, they'll be concentrated above the oil-water  
17 contact. And, you know, that number can vary, exactly  
18 where the oil-water contact will be in a particular well.  
19 So the perfs will concentrate on porous intervals above the  
20 oil-water contact.

21 Q. And how were your five first wells picked for  
22 your injection in your Phase 1?

23 A. Well, we picked the west side of the waterflood  
24 to start with, because it felt like that would be where  
25 we'd get the best response, and the five wells are actually

1 closest to the proposed water-injection plant.

2 And also in general, the west side of the area is  
3 at a lower pressure, and so it felt like it needs the  
4 waterflood.

5 Q. What is that reservoir pressure on that west side  
6 now?

7 A. Well, it goes down as low as 300 p.s.i. It  
8 varies from well to well.

9 Q. And how about on the east side? What's the  
10 reservoir pressure?

11 A. It may be as high as 800 p.s.i. in some wells.

12 Q. Will there be any stimulation on the injection  
13 wells' perfs after you re-perf?

14 A. Yes, I think we'll probably do some small acid  
15 jobs.

16 Q. Again, this information, I'm sure, is covered in  
17 your C-108, but the proposed injection water, that's --  
18 even though they're from three different pools, is that all  
19 the same, upper Pennsylvanian --

20 A. Yes.

21 Q. -- water?

22 A. Yeah, all the water is handled together and it's  
23 very similar in the three pools. The pools are all in  
24 pressure communication with each other. It's a -- one  
25 large, continuous reservoir.



1 Q. Now, you had mentioned, I believe, early on in  
2 the testimony about other upper Pennsylvanian injection  
3 projects, waterflood projects. What are some of the closer  
4 ones to this area?

5 A. Actually, that was Mr. Humphrey who mentioned  
6 that --

7 Q. Okay.

8 A. -- and actually, I don't know of any myself. I  
9 can't think of one --

10 MR. HUMPHREY: Most of them are --

11 EXAMINER STOGNER: Mr. Humphrey, yeah, do you --

12 MR. HUMPHREY: Most of them are in Texas, the  
13 eastern shelf of the Midland Basin. Almost every major  
14 upper Pennsylvanian field is under either secondary or  
15 tertiary recovery, and that includes SACROC, Jameson and  
16 some of those large fields east of Midland.

17 EXAMINER STOGNER: Those would be east of Midland

18 MR. HUMPHREY: Yeah.

19 EXAMINER STOGNER: In a similar environment?

20 MR. HUMPHREY: Correct, same -- they're lime- --  
21 The only difference is, they're limestones to dolomite, but  
22 the pore types are very similar. You get vuggy and  
23 intercrystalline porosity with some minor fracturing. The  
24 reservoir looks very similar.

25 Q. (By Examiner Stogner) This field was discovered

1 in -- What are some of the older wells in this area?

2 A. There was some production from this area in 1976.  
3 I guess that's the earliest production here, so in the area  
4 before that, and that was -- that would be up there in  
5 Section 18 and also in Section 30, are the oldest wells.

6 Q. We haven't covered this, but help me remember. I  
7 don't have my booklet here. What are the spacing rules in  
8 this pool?

9 A. We have 160-acre spacing with up to four wells.

10 Q. And let's see, what's the well-location  
11 requirements? Is that 660 from the outer boundary?

12 A. I believe that's right, yes.

13 EXAMINER STOGNER: Now if I remember right, Mr.  
14 Carr, our secondary recovery rules and regulations go back  
15 and they discuss normally the 40-acre spacing toward the  
16 outer boundary of the unitized area. But you're not asking  
17 for any special privileges on that aspect?

18 MR. CARR: No, we're not.

19 EXAMINER STOGNER: It will change internally,  
20 perhaps, but not around the unitized area; is that --

21 MR. CARR: No, we're not.

22 Q. (By Examiner Stogner) Okay, I'm referring again  
23 to Exhibit Number 19. This is the historical production  
24 data.

25 A. Yes.

1 Q. And it looks like, as you're showing here, about  
2 the middle of 1995 was the peak year.

3 A. Yes.

4 Q. What happened about the middle of 1998, first  
5 part of 1999? I see your neat little lines crumble.

6 A. Yeah, there was low oil prices then. I guess we  
7 reduced production.

8 Q. There wasn't a plant or a gas plant go down or  
9 anything such as that?

10 A. Not that I'm aware of.

11 EXAMINER STOGNER: I have no other questions of  
12 this witness, nor any of your other witnesses.

13 Do you have anything further?

14 MR. CARR: Mr. Stogner, that concludes our  
15 presentation in this case.

16 EXAMINER STOGNER: Would you provide me a rough  
17 draft?

18 MR. CARR: Yes, sir, I will. Can I have 10 days?

19 EXAMINER STOGNER: On top of your other 10?

20 MR. CARR: No.

21 EXAMINER STOGNER: Total, concurrent 10?

22 MR. CARR: Yes, sir.

23 EXAMINER STOGNER: Okay, you have 10 days, sir.  
24 You have my blessing for 10 days. Earlier if you wish.

25 With that, this case, the consolidated cases,

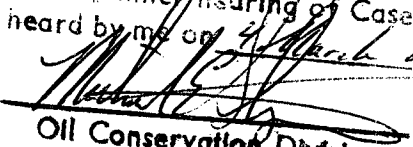
1 13,227 and 13,228, will be taken under advisement at this  
2 time.

3 MR. CARR: Thank you.

4 EXAMINER STOGNER: Thank you, gentlemen.

5 (Thereupon, these proceedings were concluded at  
6 10:41 a.m.)

7 \* \* \*

12 I do hereby certify that the foregoing is  
13 a complete record of the proceedings in  
14 the Examiner hearing of Case Nos. 13227 and 13228  
15 heard by me on 4 March 2004.  
16  Examiner  
17 Oil Conservation Division

## CERTIFICATE OF REPORTER

STATE OF NEW MEXICO    )  
                              )    ss.  
COUNTY OF SANTA FE    )

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL March 6th, 2004.



STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 16th, 2006