

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:)	
)	
APPLICATION OF SEELY OIL COMPANY FOR)	CASE NOS. 12,964
APPROVAL OF A WATERFLOOD PROJECT AND)	
QUALIFICATION OF THE PROJECT AREA FOR)	
THE RECOVERED OIL TAX RATE PURSUANT TO)	
THE ENHANCED OIL RECOVERY ACT,)	
LEA COUNTY, NEW MEXICO)	
)	
APPLICATION OF SEELY OIL COMPANY)	and 12,983
FOR APPROVAL OF A UNIT AGREEMENT,)	
LEA COUNTY, NEW MEXICO)	
)	(Consolidated)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

January 9th, 2003

Santa Fe, New Mexico

These matters came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, January 9th, 2003, 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

January 9th, 2003,
Examiner Hearing
CASE NOS. 12,963 and 12,964 (Consolidated)

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A P P E A R A N C E S

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By: WILLIAM F. CARR

* * *

1 WHEREUPON, the following proceedings were had at
2 9:29 a.m.:

3 EXAMINER CATANACH: All right, at this time I'll
4 call Case 12,963, the Application of Seely Oil Company for
5 statutory unitization, Lea County, New Mexico.

6 Call for appearances in this case.

7 MR. CARR: May it please the Examiner, my name is
8 William F. Carr with the Santa Fe office of Holland and
9 Hart, L.L.P. We represent Seely Oil Company in this
10 matter.

11 Mr. Examiner, we would request that at this time
12 you also call Case 12,964, which is the Application of
13 Seely Oil Company for approval of a waterflood project and
14 for qualification of the project for the recovered oil tax
15 rate.

16 We would also request that you call Case 12,983,
17 which is an Application of Seely Oil Company for approval
18 of a voluntary unit.

19 What we have here is two cases involving
20 formation of this unit. Case 12,963 seeks an order
21 statutorily unitizing the unit area, and it was filed some
22 time ago.

23 More recently, we started getting a very good
24 response to our efforts to voluntarily put this acreage
25 together, so we also filed for a voluntary unit, and that

1 is Case 12,983.

2 I can tell you that as of last night we come
3 before you with a hundred percent of the working interest
4 committed, a hundred percent of the royalty interest
5 committed, and only several very, very small overriding
6 royalty interests that have not yet returned their joinder
7 forms, and we believe they are coming in.

8 And so for that reason we're dismissing -- or
9 requesting that you dismiss Case 12,963, which is for
10 statutory unitization, and then consolidate the other two
11 cases so we can proceed with the waterflood with a
12 voluntary unit.

13 EXAMINER CATANACH: Okay, at this time let me
14 call Case 12,964, the Application of Seely Oil Company for
15 approval of a waterflood project and qualification of the
16 project for the recovered oil tax rate pursuant to the
17 Enhanced Oil Recovery Act, Lea County, New Mexico.

18 And I'll also call Case Number 12,983,
19 Application of Seely Oil Company for approval of a unit
20 agreement, Lea County, New Mexico.

21 Let me at this time call for appearances in any
22 of these three cases, any additional appearances.

23 There being none, then I suspect there's no
24 objection to the dismissal of the first case. I will at
25 this time grant your request to dismiss Case Number 12,963.

1 And you may proceed, Mr. Carr.

2 MR. CARR: May it please the Examiner, we have
3 two witnesses.

4 EXAMINER CATANACH: Will the two witnesses please
5 stand to be sworn in?

6 (Thereupon, the witnesses were sworn.)

7 MR. CARR: Mr. Examiner, at this time we call
8 C.W. Stumhoffer.

9 C.W. STUMHOFFER,
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. CARR:

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

15 A. My name is C.W. Stumhoffer.

16 Q. Mr. Stumhoffer, where do you reside?

17 A. Fort Worth, Texas.

18 Q. By whom are you employed?

19 A. Seely Oil Company.

20 Q. And what is your current position with Seely?

21 A. Petroleum engineer.

22 Q. Have you previously testified before the New
23 Mexico Oil Conservation Division?

24 A. Yes, I have.

25 Q. At the time of that testimony, were your

1 credentials as an expert witness in petroleum engineering
2 accepted and made a matter of record?

3 A. Yes, they were.

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

6 A. Yes, I am.

7 Q. Are you familiar with the status of the lands in
8 the proposed EK Penrose Sand Unit?

9 A. Yes.

10 Q. You are the person who has been responsible for
11 negotiating agreements with the other interest owners in
12 the unit area; is that not correct?

13 A. Yes, I have been. Yes, correct.

14 Q. And at this time we stand before the Division
15 having reached a voluntary agreement with virtually all the
16 interest owners in the proposed unit area?

17 A. That's correct.

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

20 EXAMINER CATANACH: Mr. Stumhoffer is so
21 qualified.

22 Q. (By Mr. Carr) Could you briefly summarize for
23 Mr. Catanach what it is that Seely Oil Company seeks with
24 this Application?

25 A. We propose to create approval of the unit

1 agreement for the EK Penrose Sand Unit, which will be a
2 voluntary unit containing 1469.75 acres, that consists of
3 federal and fee lands -- no state lands are involved -- in
4 Lea County, New Mexico.

5 Q. Are we also seeking approval of the waterflood?

6 A. That is correct, of the Penrose sand.

7 Q. And we seek to qualify this project for the
8 recovered oil tax rate pursuant to the New Mexico Enhanced
9 Oil Recovery Act, do we not?

10 A. That's correct.

11 Q. Let's go to what has been marked for
12 identification as Seely Oil Company Exhibit Number 1, and
13 I'd ask you just to identify that for Mr. Catanach and
14 briefly explain where the unit is and what this exhibit
15 shows.

16 A. Exhibit 1 is a unit map of the -- a map of the
17 proposed unit area, and it's located 25 miles west of
18 Hobbs. I notice on the docket it was shown 14 miles
19 southwest of Lovington, but about the same place.

20 The unitized area will consist of seven federal
21 leases and two fee leases. Seely Oil Company is the
22 operator of six of the federal leases, Yates Petroleum is
23 the operator of one federal lease and -- within the unit
24 area.

25 And the area we're talking about unitizing is on

1 the south end of the EK Queen Unit, which is a previously
2 approved waterflood unit in the Queen formation.

3 Q. Another witness will review the status of the
4 individual wells within the unit area; is that correct?

5 A. That's correct.

6 Q. Now, you referenced the EK Queen Unit.
7 Approximately when was that unit created?

8 A. That unit was created in June of 1965 by Mobil
9 Oil Corporation.

10 Q. And the unit area for the EK Queen initially
11 covered a portion of the area which you are seeking to
12 unitize today; is that right?

13 A. That is correct. The Queen formation was the
14 unitized formation under the EK Queen Unit, and that did
15 include the Penrose, although the Penrose was never
16 developed for waterflood.

17 Q. This is actually the second hearing we've had in
18 our effort to form this unit; is that correct?

19 A. That is correct.

20 Q. And when was the first hearing?

21 A. On July 24th of 2002.

22 Q. And that was Case 12,891?

23 A. That's correct.

24 Q. And what did we do in that case?

25 A. In that case we filed the Application to remove

1 the lower Penrose -- the lower Queen, which is known as the
2 Penrose sand, from the unitized formation under the EK
3 Queen Unit so we could free a portion of the acreage up to
4 include in the proposed EK Penrose sand unit.

5 Q. And that effort to contract the unitized interval
6 was supported by all the working interest owners?

7 A. That's correct.

8 Q. Did the State Land Office and BLM also support
9 that effort?

10 A. Yes, they did.

11 Q. And it was approved by the Division, was it not?

12 A. That is correct.

13 MR. CARR: Mr. Examiner, that was Order Number
14 R-2913-A that was entered on July 24th.

15 Q. (By Mr. Carr) And what we now seek, Mr.
16 Stumhoffer, is to unitize and implement waterflood
17 operations in the Penrose, including a portion of the area
18 contracted out of the EK Queen Unit; is that correct?

19 A. That is correct, we plan to unitize it with some
20 other Penrose sand productive acreage.

21 Q. That is south of what was originally --

22 A. South of the area, right.

23 Q. Let's go to what has been marked Exhibit Number
24 2. Could you identify that, please?

25 A. Exhibit Number 2 is the unit agreement for the

1 development and operation of the EK Penrose Sand Unit.

2 Q. Standard form?

3 A. Standard form, approved by the BLM.

4 Q. Does it identify the portion of the Queen to be
5 unitized in this Application?

6 A. Yes, it does.

7 Q. And a type log will be reviewed by a subsequent
8 witness; is that right?

9 A. That's correct.

10 Q. Does the unit agreement provide for waterflood
11 operations?

12 A. Yes, it does.

13 Q. It provides also for the filing of plans of
14 development with the BLM, does it not?

15 A. That is correct.

16 Q. Will Seely agree to and also file the plans of
17 development with the Oil Conservation Division --

18 A. Yes.

19 Q. -- at the same time it files with the BLM?

20 A. Yes.

21 Q. Would you identify what has been marked as Seely
22 Exhibit Number 3?

23 A. Exhibit Number 3 is the unit operating agreement.

24 Q. And is this again a standard agreement that
25 defines the relationship between the parties?

1 A. Yes, it is, it sets out the terms and conditions
2 for joint operation of the EK Penrose sand unit, with Seely
3 Oil Company as the proposed operator, and it includes all
4 responsibilities of all the working interest owners and
5 sets out accounting procedures.

6 Q. Seely has reviewed the Application with the BLM;
7 is that correct?

8 A. That's right.

9 Q. Would you identify what has been marked Exhibit
10 4?

11 A. Exhibit 4 is a copy of a letter from the BLM
12 granting their preliminary approval of the proposed EK
13 Penrose sand unit.

14 Q. The BLM has designated this as an area that can
15 logically be developed under a unit plan, has it not?

16 A. Yes, it has.

17 Q. And did you review this with the State Land
18 Office?

19 A. There are no state lands in this unit.

20 Q. When we contracted the EK Queen, there were state
21 lands, so the Land Office was involved, but they're not
22 involved in --

23 A. No, they're not involved in this unit.

24 Q. Now, we initially filed this Application for
25 statutory unitization?

1 A. That's correct.

2 Q. What has happened since that date?

3 A. Since that happened, we have been able to
4 purchase or get agreements with all the working interest
5 owners in the unit area, a hundred percent. We have a
6 hundred-percent approval, ratification, from the royalty
7 owners under the fee lands, and we have 99-plus percent of
8 the overriding royalty owners have ratified the unit
9 agreement. There are six small -- six very small
10 overriding royalty owners that we don't have, we expect to
11 get.

12 Q. And you have talked to each of those?

13 A. Yes.

14 Q. Now, what is Exhibit Number 5?

15 A. Exhibit Number 5 is the list of the owners that
16 were notified of Seely Oil Company's plan to unitize the EK
17 Penrose Sand Unit for waterflood development.

18 Q. It talks about an application for statutory
19 unitization, but this is the list we prepared for both
20 cases. It shows all owners; is that correct?

21 A. That's correct.

22 Q. And who has not voluntarily committed at this
23 time? Can you identify them for me?

24 A. Yes, I can. On the second page the Higgins Trust
25 has not ratified the unit agreement. The Selma E. Andrews

1 Trust, the Braille Institute of America, Sabine Royalty
2 Trust, and Asa Grayson Ashworth, and the Selma E. Andrews
3 Perpetual Charitable Trust.

4 Q. And you have communicated with these and
5 anticipate their joining?

6 A. They have been sent ratification instruments.

7 Q. If one of these or all of them shouldn't join,
8 how would their interests be paid and handled?

9 A. They would be paid on a lease basis.

10 Q. Even if they are out, Seely would have virtually
11 complete and effective control of all unit operations; is
12 that right?

13 A. That's correct.

14 Q. Seely -- With a voluntary unit, there's no party
15 to notify of the unit Application; is that correct?

16 A. That's right.

17 Q. They were all notified of the statutory
18 Application?

19 A. That's right.

20 Q. You're also seeking the approval of the Penrose
21 Sand Waterflood. Has notice of the waterflood project been
22 provided in accordance with OCD Rules?

23 A. Yes.

24 Q. And who did you notify?

25 A. All the operators within a half mile of injection

1 and proposed injection under the unit and the surface
2 owner.

3 Q. On each injection well?

4 A. On each injection well.

5 Q. And is Exhibit Number 6 a copy of the affidavit
6 confirming that notice of the waterflood project has been
7 provided as required by Division Rules?

8 A. Yes, it is.

9 Q. Will Seely call an additional engineering witness
10 to review the technical portions of the case?

11 A. Yes.

12 Q. Were Exhibits 1 through 6 either prepared by you
13 or compiled under your direction and supervision?

14 A. Yes, they were.

15 MR. CARR: Mr. Catanach, at this time we move the
16 admission into evidence of Seely Oil Company Exhibits 1
17 through 6.

18 EXAMINER CATANACH: Exhibits 1 through 6 will be
19 admitted as evidence.

20 MR. CARR: And that concludes my direct
21 examination of Mr. Stumhoffer.

22 EXAMINATION

23 BY EXAMINER CATANACH:

24 Q. Okay, Mr. Stumhoffer, the EK Queen Unit, who
25 operates that?

1 A. Seely Oil Company is the present operator.

2 Q. Now, as I understand it, part of the EK Queen
3 Unit originally encompassed a portion of the unit that
4 you're trying to put together?

5 A. Yes, it did.

6 Q. Okay, so you contracted the EK Queen, took that
7 acreage out?

8 A. No, we took the -- we changed the unitized
9 formation --

10 Q. Okay.

11 A. -- to remove the lower -- the Penrose sand, which
12 is lower Queen, from the unitized formation. And then it
13 was taken out of the whole -- under all of the EK Queen
14 Unit area.

15 Q. So the Penrose was never developed in the EK
16 Queen Unit?

17 A. It was in the unitized formation but was never
18 developed for waterflood.

19 Q. Okay.

20 A. It is only productive on the extreme south end of
21 the EK Queen Unit --

22 Q. Okay.

23 A. -- and there's only one well that produced oil,
24 and a couple wells tested gas.

25 Q. So within the unit that you're proposing, that is

1 the only interval that you're going to develop; is that
2 correct?

3 A. Under the Penrose sand, right.

4 Q. No other Queen intervals?

5 A. No.

6 Q. Now, you've been in contact with the six royalty
7 interest owners that have not committed; is that correct?

8 A. That's correct. I anticipate -- They have not
9 said they weren't going to ratify the unit documents, and
10 so I assume with no news it means they will send it as soon
11 as they were able to do so. I don't anticipate any problem
12 with those very small overriding royalty owners.

13 Q. Okay.

14 A. Most of them are in trust, and it takes a little
15 while to get them to do it.

16 EXAMINER CATANACH: Mr. Carr, your next witness
17 is going to testify as to the unit boundaries and --

18 MR. CARR: Yeah, all of that will be covered by
19 our next witness, yes, sir.

20 Q. (By Examiner Catanach) Okay. How much interest
21 does Seely own in this unit, Mr. Stumhoffer?

22 A. Well, Seely and his investor group owns all of
23 the working interest except for the Yates tract, Yates
24 Petroleum tract, and --

25 Q. Now -- I'm sorry, go ahead.

1 A. Go ahead.

2 Q. Was there production on the Yates tract?

3 A. Not from the Penrose. We have examined -- There
4 were two Bone Springs wells on their tract, and we've
5 examined the logs and all the information, and this is
6 something that's going to be addressed by the next witness,
7 really, so I'd be getting into an area that he's going to
8 talk about.

9 Q. Okay. Yates is fully committed to the waterflood
10 project?

11 A. Yes. But there have been no -- In answer to your
12 question, there has been no Penrose sand production from
13 the Yates tract. We just think there is Penrose sand
14 production there, based on log evaluation.

15 Q. Now, as far as allocating production, have you
16 guys developed a formula that everybody's happy with?

17 A. Yes, eighty -- Well, that's another area that --

18 Q. Okay.

19 A. -- he will get into.

20 EXAMINER CATANACH: I think that's all I have.
21 Did you anything?

22 MR. BROOKS: No, no questions.

23 EXAMINER CATANACH: That's all we have.

24 MR. CARR: Mr. Catanach, at this time we'd call
25 David L. Henderson. And Mr. Stumhoffer will be here if you

1 have questions. We have two engineers, and Mr. Stumhoffer
2 is suffering having to function as our landman here today.

3 MR. STUMHOFFER: Don't ask me for my
4 qualifications as a landman. I've done a little of it.

5 DAVID L. HENDERSON,
6 the witness herein, after having been first duly sworn upon
7 his oath, was examined and testified as follows:

8 DIRECT EXAMINATION

9 BY MR. CARR:

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

11 A. David L. Henderson.

12 Q. Mr. Henderson, where do you reside?

13 A. Fort Worth, Texas.

14 Q. And by whom are you employed?

15 A. Seely Oil Company.

16 Q. And what is your position with Seely Oil Company?

17 A. Vice president.

18 Q. Have you previously testified before the New
19 Mexico Oil Conservation Division?

20 A. Yes, sir.

21 Q. At the time of that testimony, were your
22 credentials as an expert in petroleum engineering accepted
23 and made a matter of record?

24 A. Yes, sir.

25 Q. Are you familiar with the Applications filed in

1 each of these consolidated cases?

2 A. Yes.

3 Q. And have you made an engineering study of the
4 portion of the Queen formation, the Penrose sand, which is
5 the subject of these cases?

6 A. Yes.

7 MR. CARR: Are the witness's qualifications
8 acceptable?

9 EXAMINER CATANACH: Yes, they are.

10 MR. CARR: Mr. Catanach, this witness is going to
11 first review the geology of the Penrose formation, and then
12 we're going to talk about the primary production from the
13 unit area, we're going to talk about the proposed
14 unitization and the anticipated secondary recovery. He
15 will then review the C-108 Application and then wrap up by
16 presenting the request for qualification under the Enhanced
17 Oil Recovery Act. And so that's how we intend to organize
18 this presentation.

19 EXAMINER CATANACH: Very good.

20 Q. (By Mr. Carr) Mr. Henderson, let's first go to
21 what has been marked as Exhibit Number 7, and would you
22 just explain to the Examiner what this is?

23 A. Exhibit Number 7 is a summary of technical
24 testimony with attached tables and other supporting data,
25 supporting the formation of the EK Penrose Sand Unit.

1 Q. And you're going to be referring to certain of
2 these tables as you go through your overall presentation;
3 is that correct?

4 A. Yes, I will.

5 Q. And this also contains a summary of the testimony
6 that you will be presenting as to each of the exhibits?

7 A. Yes.

8 Q. Okay. Let's just look back briefly at Exhibit
9 Number 1, and let's start with that. Explain what that is
10 and, for the purposes of your part of the case, what it
11 shows.

12 A. Exhibit Number 1 is a unit map showing the 1470,
13 plus or minus, acres of the proposed unit, along with
14 identifying wells that -- The P represents Penrose, and the
15 Delaware and other formations are also identified so that
16 you can pick out the Penrose wells easier as you examine
17 the map.

18 Q. And it also -- Does it show the wells that we
19 intend to convert or use for injection?

20 A. The wells are on here, but they're not actually
21 shown as the wells that we're going to convert to
22 injection. That's shown on a plan of development map to be
23 presented later.

24 Q. All right, let's go to what has been marked for
25 identification as Seely Exhibit Number 8. Would you

1 identify and review this, please?

2 A. Exhibit Number 8 is a type log from the C.W.
3 Stumhoffer Federal CS Number 1 well which shows the top of
4 the unitized formation from 4640 to 4750 and which does
5 correspond with the unitized interval of the unit
6 agreement.

7 Q. And the portions of the unit -- This area had
8 initially been included in the EK Penrose Queen Unit; is
9 that correct?

10 A. That is correct.

11 Q. But the area that is shown in the green block as
12 the unitized formation has been excluded from that unit and
13 now is available to be included in the unit you're
14 proposing today?

15 A. Yes, the vertical limits were contracted and
16 removed the Penrose formation.

17 Q. Could you provide Mr. Catanach with a general
18 description of the Penrose sand in this area?

19 A. The Penrose sand is the lower member of the
20 Queen, which is a member of the Guadalupian series of the
21 Permian age. The productive sand is always gray sand,
22 fine- to medium-grain friable quartz sandstone.

23 Q. Let's go to your isopach, Exhibit Number 9.
24 Would you review the information on this exhibit?

25 A. Exhibit Number 9 shows the thickness from both --

1 whatever available data we have on cores as well as logs,
2 and basically shows the Penrose is, you know, anywhere from
3 two to four to six to eight feet thick. Thickness was
4 determined by, like I said, all available log and core data
5 of public record.

6 The sand appears to be a wedge or bar deposit,
7 and it's isolated by hard, dense anhydrite above the pay
8 and red, silty tight sand with calcerous or anhydritic
9 cementation below the porosity developments.

10 Note that the entire unitized area should
11 contribute reserves to the unit according to the sand
12 thickness, and it does conform to the unit boundary.

13 Q. Now, the log and core data that you utilized in
14 developing this map is set forth on Table I to Exhibit 7;
15 is that right?

16 A. That is correct.

17 Q. And that's one of those tables that is just
18 included in the background information that you're
19 providing for the Examiner?

20 A. That is correct.

21 Q. And it was this interpretation that was utilized
22 to set the boundaries for the unitized area; is that right?

23 A. That is correct.

24 Q. And this is the information that was shared with
25 the BLM and also has been shared with the other working

1 interest owners in the unit, in developing this plan?

2 A. That is correct.

3 Q. Let's go to Exhibit Number 10. Will you identify
4 and review that exhibit?

5 A. Exhibit Number 10 is a cross-section from east to
6 west over almost the entire unit -- No, well, actually
7 northeast to southwest, and you can see the relationship
8 between the upper Queen and the Penrose sand that we're
9 pursuing in this hearing.

10 You can see that the gross thickness is shaded in
11 yellow, and the productive thickness is shaded in red. How
12 that was determined is from drilling time, shows, the
13 production recovered, and also some cored data supports
14 that all of that porosity thickness is not productive, just
15 the top part where there's the gray sand.

16 Q. And if we look at this and compare it to the
17 preceding exhibit, Exhibit Number 9, this line of cross-
18 section starts over on the western edge of the unit in the
19 McElvain well located -- Where is that, in Section 25?

20 A. Yeah, it's the southwest of the northeast of
21 Section 25.

22 Q. And then we move over to the Seely well, which is
23 located --

24 A. -- southeast of the southeast of Section 20.

25 Q. And then as we move on across, why don't you just

1 run through these wells so we can see the line?

2 A. Okay, the Scharbauer is -- the Number 2 well over
3 here is on the far right of the cross-section. That's the
4 one where when the well was drilled all this thickness was
5 found on this log, but the well never did really produce
6 like it should have. And it made us wonder, you know, what
7 it really was.

8 So we've gone back and done some sidewall cores,
9 we've done some FMI imaging logging to show that the actual
10 porosity is only in the very top of this thing, and it is
11 limited to where you have gray sand and the red sand does
12 not produce.

13 Q. Now, basically what these two exhibits together
14 show is that you have the Penrose sand running across the
15 unit area, and it looks like a logical candidate for a
16 waterflood; is that right?

17 A. It is continuous across the whole unit area.

18 Q. Let's move to what has been marked Exhibit Number
19 11, the structure map. Will you review the information on
20 that exhibit for Mr. Catanach?

21 A. The Penrose sand has a minor relief, it has
22 regional dip of 100 to 125 feet per mile with almost no
23 exception. There is a gas-oil contact that was indicated
24 by the gas wells in the southeast of the -- excuse me, the
25 southwest of the southeast of Section 24 was the gas well,

1 as well as the northeast of the southwest of 19, indicating
2 that there is a gas cap, and it was estimated at a minus
3 708.

4 Several wells above this have produced a
5 substantial amount of gas, but were plugged back and used
6 as wells in the upper Queen and main Queen EK waterflood
7 and never produced any substantial gas from the Penrose.

8 Q. What is the primary depletion recovery mechanism
9 in this Penrose sand reservoir?

10 A. Solution gas drive.

11 Q. Has the gas cap, in your opinion, been an
12 effective part of the primary producing mechanism?

13 A. No.

14 Q. Is there any significant evidence of water
15 encroachment in this pool?

16 A. No. There is one well to the extreme southeast,
17 the McElvain Federal Number 10, which is the northeast of
18 the northwest of Section 29, that does cut about 50 percent
19 water, but that appears to be localized to the southeast
20 part of the field.

21 Q. There really is no significant water production
22 throughout the area --

23 A. No.

24 Q. -- that is the subject of this --

25 A. No.

1 Q. -- Application?

2 Let's review for a few minutes the primary
3 production history of the unit. Would you review that for
4 the Examiner? And you may want to refer to Exhibit 12.

5 A. Okay, if you would, Mr. Examiner, examine Exhibit
6 12. The Ibex Company McElvain Federal Number 1 well, which
7 is located in the northwest of the northeast of Section 25,
8 was the discovery well in August of 1955. The initial
9 potential was 285 barrels of oil per day.

10 By January, 1958, 12 wells had tested the
11 Penrose: Eight were oil, three were gas, and one was dry.

12 Further development began in 1974 when the
13 Scharbauer wells were drilled, which is on the extreme
14 northeast part of the unit, which is the south half of the
15 southwest quarter of Section 20.

16 The eastern limit was established by the dry hole
17 east of that, the Union Texas State Number 1 in the
18 southwest of the southeast of Section 20.

19 The northeast limit was established by the
20 General Operating Scharbauer Cattle Company Number 2 well,
21 which was very limited pay, and that's also in the
22 northwest of the southwest of 20.

23 Further development was in 1981. C.W. Stumhoffer
24 drilled the Federal CS Number 1 well, which had an initial
25 potential of 16 barrels of oil per day.

1 That pretty well covers --

2 Q. Are the initial potentials shown on this exhibit?

3 A. Yes, this is a map contoured on the initial
4 potentials.

5 Q. What is Exhibit Number 13?

6 A. Exhibit Number 13 is the first 12 months of
7 production from the Penrose.

8 Q. And what is the purpose of this exhibit?

9 A. It's an indication of reservoir quality and
10 permeability, and also it was an attempt to better define
11 the reservoir. It does support the IP map very well with
12 the same basic trend.

13 Q. How many wells have produced Penrose oil within
14 the proposed unit area?

15 A. Sixteen wells.

16 Q. And have you included in the material you've
17 presented here today lists of all the wells that have
18 tested the sands?

19 A. Yes, in Exhibit 7 Table II lists all wells that
20 have tested the Penrose or are to be included in the
21 development of the EK Penrose Sand Unit.

22 Q. And what is the total production from these
23 wells, the most recent total number that you have?

24 A. As of January 1st, 2002, it was 395,000 barrels,
25 plus or minus.

1 Q. Would you identify and review what has been
2 marked Exhibit 14?

3 A. Exhibit 14 is the cum production map from the
4 Penrose sand. It also shows the same southwest-northeast
5 trend, and you can see where the older wells we have in
6 there, the longest, have certainly cum'd the most oil
7 production.

8 Q. Okay. Is there any significant production from
9 the Penrose in the unit area at this time?

10 A. No.

11 Q. What is -- Is there production at this time?

12 A. There's a few wells that make one barrel or two
13 barrels a day. The McElvain Federal Number 10 only makes
14 about 15 to 16 barrels of oil per day. The Citation Number
15 1 well makes 67 barrels per day.

16 Q. All right. I'd like to now have you review the
17 proposed unitization plan, and we need to go to what has
18 been marked Exhibit Number 16.

19 There's a gap in our numbering, Mr. Catanach.
20 There is no Exhibit 15.

21 A. Okay, Number 16 is a plan-of-development map, and
22 -- that shows that we intend to proceed with the peripheral
23 flood that -- and you can see where we're going to drill an
24 injection well on the southeast end of it, convert six
25 wells, we're going to deepen one well, and then we're going

1 to work over one well on the Yates tract.

2 Q. So how many injection wells will we actually
3 have?

4 A. Nine injection wells.

5 Q. Do you plan to add additional injection at this
6 time?

7 A. No, but we may in the future, depending on how
8 the project goes.

9 Q. What is the participation formula in the unit
10 agreement? How is participation determined?

11 A. Eight percent cumulative recovery and 20 percent
12 acreage.

13 Q. And are the individual tract factors for this
14 unit set out on Table III to Exhibit 7?

15 A. Yes, they are.

16 Q. In your opinion, does the unit agreement
17 participation formula allocate production to the separately
18 owned tracts on a fair, reasonable and equitable basis?

19 A. Yes.

20 Q. Will unitization and adoption of the proposed
21 waterflood benefit all the interest owners in the unit
22 area?

23 A. Yes.

24 Q. And I guess that's why you were able to get a
25 hundred-percent ratification; is that right?

1 A. That's exactly right.

2 Q. Could you review for Mr. Catanach Seely's
3 estimates of secondary reserves? I think you're looking
4 probably at Tables IV and V in Exhibit 7.

5 A. Yeah, Table IV is a summary of basic data which
6 was derived from log calculations and core data that was
7 available and shows 2 million barrels of oil in place and
8 460,000 barrels or so of secondary recovery, based upon the
9 formulas and information set out in Table V as well.

10 Q. Let's go now to the Application for authorization
11 to inject, Exhibit Number 17. Would you initially just
12 identify that for Mr. Catanach?

13 A. It's a C-108, and the form was prepared by me and
14 by C.W. Seely, Jr.

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

16 A. No.

17 Q. Would you go to pages 7 through 9 and review
18 those maps for Mr. Catanach?

19 A. Okay, page 7 is a shot of a county map showing
20 all operators and leases within two to three miles of our
21 proposed unit.

22 Q. Okay, and page 8?

23 A. Page 8 is an area-of-review map showing all wells
24 within a half mile of each proposed injection well.

25 Q. And then page 9?

1 A. Page 9 is another copy of the plan-of-development
2 map, as set out in previous discussions.

3 Q. In your opinion, does this exhibit contain all
4 the information required for a Form C-108 review of this
5 proposed project?

6 A. Yes.

7 Q. On pages 10 through 51, you have well data sheets
8 for each of the wells that penetrate the Penrose; is that
9 correct?

10 A. That is correct.

11 Q. And there are how many of them?

12 A. 43.

13 Q. And are they organized by section?

14 A. They're organized by section.

15 Q. And do these sheets contain the data on each of
16 the wells that are --

17 A. On each and every well.

18 Q. Are there plugged and abandoned wells within any
19 of the areas of review?

20 A. Yes, 16.

21 Q. And does Exhibit 17 contain a well data sheet for
22 each of these wells?

23 A. Yes, it does.

24 Q. And have you reviewed this information?

25 A. Yes, I have.

1 Q. And in your opinion are all these wells plugged
2 so as to prevent the migration of injected fluid from the
3 injection interval?

4 A. Yes.

5 Q. What volumes does Seely propose to inject?

6 A. It should average a hundred barrels of water per
7 day per well, with a maximum of 200 barrels of water per
8 day per well.

9 Q. And what is the source of the water you will be
10 injecting?

11 A. Various water sources from Bone Spring and Queen
12 formations. We will use no fresh water for makeup water.

13 Q. Is the system going to be a closed or an open
14 system?

15 A. Closed.

16 Q. Will Seely limit the injection pressure to .2
17 pound per foot of depth to the top of the injection
18 interval until higher pressures, if needed, are justified
19 by step-rate tests?

20 A. Yes.

21 Q. And those would be witnessed by the Division; is
22 that correct?

23 A. Yes.

24 Q. Have you reviewed the data available on wells
25 within the area of review for this project and satisfied

1 yourself that there is no remedial work required on any of
2 the wells to enable Seely and others to safely operate this
3 project?

4 A. Yes.

5 Q. Initially, you identified three wells that needed
6 work; is that correct?

7 A. That's correct, two wells in the Yates tract and
8 one well on the -- that Concho operates.

9 Q. Now, you've arranged for the remedial work to be
10 done on the Yates well?

11 A. That's correct.

12 Q. What about the Concho well?

13 A. The Concho well will have to be addressed.

14 Q. Where is that well located?

15 A. It's in the southwest of the northeast of Section
16 25, the same tract as the McElvain Federal Number 6.

17 Q. And there will be additional work that will be
18 required on this well?

19 A. That is correct.

20 Q. And that should be identified and addressed in
21 the order as a condition to injection?

22 A. That is correct.

23 Q. And you have reviewed the current status of the
24 wells that you propose to utilize for injection. You've
25 got six you're going to convert?

1 A. That's right.

2 Q. One you're going to deepen and complete?

3 A. That's correct.

4 Q. One to be recompleted as injection and one new
5 drill?

6 A. Yes, sir, as shown on the plan-of-development
7 map.

8 Q. How will Seely monitor the injection to assure
9 the integrity of the wellbores in this injection effort?

10 A. The tubing casing annulus will be filled with
11 inert packer fluid, pressure gauges will be installed on
12 the Bradenhead as well as the tubing casing annulus and
13 will be monitored daily, and the mechanical tests will be
14 done as required by the OCD.

15 Q. Will injection into these wells pose any threat
16 to any underground source of drinking water?

17 A. No.

18 Q. Are there freshwater zones in the area?

19 A. Yes.

20 Q. And what is that?

21 A. The Ogallala formation at about 250 to 300 feet.

22 Q. Are there any freshwater wells within a mile of
23 any injection well?

24 A. No.

25 Q. Do you anticipate any compatibility problem by

1 injecting the proposed produced water into the --

2 A. No, we have run compatibility tests on all the
3 water sources that we have at this time, and we can
4 certainly provide copies to the OCD if necessary.

5 Q. Have you examined the available geologic and
6 engineering data on this reservoir and as a result of this
7 review found any evidence of open faults or other
8 hydrologic connections between the injection interval and
9 any underground source of drinking water?

10 A. No.

11 Q. Does Seely also seek authority to commit
12 additional wells to injection at orthodox and unorthodox
13 locations, obtaining approval for these wells through
14 administrative procedures?

15 A. Yes.

16 Q. How soon does Seely hope to commence injection in
17 the project area?

18 A. Third quarter, 2003.

19 Q. Let's go now to what has been marked Exhibit 18,
20 the Application to qualify the project for the recovered
21 tax rate. Mr. Henderson, does this Application contain the
22 information required by OCD Rules?

23 A. Yes.

24 Q. What are the initial estimated capital costs to
25 be incurred in this project?

1 A. \$1.8 million.

2 Q. And what are the total project costs?

3 A. \$3.4 million.

4 Q. How much additional production does Seely believe
5 they can obtain from this waterflood project?

6 A. Four hundred sixty thousand million stock tank
7 barrels. Excuse me, 460,000 stock tank barrels. That
8 would be a great project, wouldn't it?

9 Q. What is the total value of this additional
10 production?

11 A. Roughly \$10 million, based on \$22 per stock tank
12 barrel.

13 Q. Do Exhibits D1 and D2 that are attached to this
14 Application -- that is, Exhibit 18 -- are these unit
15 performance curves?

16 A. Yes.

17 Q. D1 shows the past production history in the
18 Penrose from the area?

19 A. That is correct.

20 Q. And then D2 shows the projection that you have
21 for Penrose production following the implementation of a
22 waterflood?

23 A. That is correct.

24 Q. Mr. Henderson, in your opinion will approval of
25 this Application and implementation of this waterflood

1 project be in the best interest of conservation, the
2 prevention of waste and the protection of correlative
3 rights?

4 A. Yes.

5 Q. Were Exhibits 7 through 18 either prepared by you
6 or compiled at your direction?

7 A. Yes, they were.

8 MR. CARR: At this time, Mr. Catanach, we'd move
9 the admission into evidence of Exhibits 7 through 14 and 16
10 through 18.

11 EXAMINER CATANACH: Exhibits 7 through 14 and 16
12 through 18 will be admitted.

13 MR. CARR: And that concludes my direct
14 examination of Mr. Henderson.

15 EXAMINATION

16 BY EXAMINER CATANACH:

17 Q. Mr. Henderson, in the northwest -- or north and
18 northwest portion of the units, you've got that shown as
19 gas productive. I assume that's above the gas-oil contact?

20 A. That is correct.

21 Q. Now, has that gas all been produced?

22 A. No, there has been no gas production from the gas
23 cap since those wells were initially tested. They were
24 immediately shut in or plugged back and used as upper Queen
25 injection wells or producers.

1 Q. Why is that, do you know?

2 A. Mobil was containing their waterflood to the
3 upper and main Queen. They completely excluded the
4 Penrose, they never pursued it.

5 Q. So what are your plans for that gas-productive
6 interval there? You're --

7 A. We're going to fill up the gas cap to contain the
8 oil in the oil column with water.

9 Q. Do you know how much gas is there?

10 A. No. I can calculate it, but I don't know it
11 offhand, no.

12 Q. Why is that not worth producing, that gas? Or
13 why do you choose not to produce that gas?

14 A. Because anytime you produce the gas and take the
15 pressure off and the oil column comes updip, you leave
16 residual oil that you could get waterflooding, if you
17 filled it with water.

18 Q. And you say that's going to -- You think that's
19 going to increase the amount of oil recovered?

20 A. Yes, sir. I think producing the gas cap and
21 bringing oil up into the gas cap will reduce what we
22 recover.

23 Q. Will that gas ultimately not be recovered at all?

24 A. No, it should be recovered with the oil and
25 displaced also by water.

1 Q. Okay. Now, the southeast portion of the unit,
2 there really isn't a lot of Penrose production?

3 A. There is a zone that we -- behind pipe in that
4 C.W. Trainer well, that we think is productive, and also in
5 the McElvain 10, that correlates with the McElvain 10
6 Penrose section.

7 And then there's a Penrose field back to the east
8 three-quarters of a mile or a mile, that's also productive.

9 There also was a show reported when the Kaiser-
10 Francis McElvain Federal in the northwest of the southeast
11 of Section 30 was drilled through the Penrose.

12 Q. Now, how did you all decide on the pattern for
13 this waterflood project?

14 A. Using the available wellbores, without having to
15 drill a bunch of wells.

16 Q. So at this point you're not going to recover
17 anything that's outside essentially the circle of
18 injection?

19 A. Right, you will in the McElvain Number 6, and
20 there's a chance that we may drill a well outside, yes.

21 Q. I'm sorry, where is the McElvain Number 6?

22 A. It's in the southwest of the northeast of Section
23 25. It's outside the ring.

24 Q. Okay.

25 A. But there's always a chance of drilling a well in

1 the latter stages of the waterflood, on the edges.

2 Q. Some of these other Bone Spring wells that are
3 outside the unit on the south end, those are not going to
4 be used?

5 A. No.

6 Q. Okay, and initially you plan to have nine
7 injection wells?

8 A. That's correct.

9 Q. And are all those going to be brought on at the
10 same time?

11 A. They should all be on within 12 to 18 months from
12 the time we receive approval. In this type of flood, the
13 quicker we get water in the ground, the better.

14 Q. And how many producing wells will you have?

15 A. Eight initially.

16 Q. Does that include the McElvain Number 6?

17 A. Nine including the McElvain Number 6, excuse me.
18 Eight inside the pattern.

19 Q. Okay, and the unitized interval is shown on that
20 type log 4640 to 4750?

21 A. That is correct.

22 Q. Okay, and cumulative production, you said as of
23 January 1st, 2002 --

24 A. Uh-huh.

25 Q. -- was 395,000 barrels?

1 A. That's correct.

2 Q. That's from everything within the unit boundary?

3 A. That is correct.

4 Q. So you at this point plan on -- your recovery
5 will be more than primary?

6 A. Well, there's still some production -- There's
7 some primary production at this time on this unit in two
8 wells, and when you estimate the primary from those wells,
9 it ends up about -- close to 460,000 barrels. So it's a
10 one to one.

11 Q. Okay. And your estimate was 2 million barrels
12 original oil in place?

13 A. Yes, sir.

14 Q. Okay, you identified, you said, three wells
15 you've identified for needing work, and two of those were
16 the Yates wells?

17 A. Yes, sir.

18 Q. Now, when you say needed work, I assume that
19 that's --

20 A. The Penrose is not covered by cement on the
21 primary cement job.

22 Q. And those are the two Yates wells in Section 30;
23 is that correct?

24 A. That is correct.

25 Q. And has that work been done, or is that going to

1 be done?

2 A. The Number 2 Howe was -- they had a casing leak
3 and they squeezed it, and there is a chance that the cement
4 covered the zone. Yates has agreed to run a cement bond
5 log when they work the well over.

6 The Howe Number 1, the north offset to that, is
7 one of our injection wells, and that will be handled when
8 we convert it to injection.

9 The other is the Concho Edith Federal Number 2,
10 located in the southwest of the northeast of 25, and it
11 does not have cement across the Penrose.

12 Q. And that's a Concho well.

13 A. That's a Concho well.

14 Q. And how is that progressing with Concho? Have
15 you talked to them about it?

16 A. We've talked to them about it several times. I
17 suppose we're going to talk to them about it several more.
18 It's going to have to -- That's got to be negotiated.

19 Q. Now, this area, as far as you know, was never
20 waterflooded before?

21 A. No, no.

22 Q. The current production is only what, eight to 10
23 barrels a day from the whole unit?

24 A. No, it's more in the range of 25, 26 barrels a
25 day from the entire unit. You've got six or seven from the

1 Citation well, 15 to 16 from the McElvain 10, and there's
2 five or six barrels from the rest of the unit.

3 Q. When were most of these wells drilled, Mr.
4 Henderson?

5 A. A lot of the wells, the original wells that were
6 drilled for Penrose production were started in the 1950s,
7 and there were five or six drilled in the -- and like I
8 said, by 1958 there were a total of twelve drilled, eight
9 oil producers, three gas and one dry hole. And then
10 several more were drilled in the mid-1970s, a couple in the
11 mid-1980s, and two recently.

12 Most of the deeper wells that have penetrated it
13 for other objectives have been since 1981 or 1982, very
14 recent.

15 Q. Now, the wells that you plan to use as injection
16 wells, were some of those the older wells drilled in the
17 1950s?

18 A. Yes.

19 Q. What do you think the current condition of those
20 wellbores is?

21 A. The wells that were -- up in the old EK Queen
22 Unit, the wells that we're talking about up there have been
23 tested, and they have -- mechanical-integrity tested,
24 because they're currently upper Queen or main Queen
25 injection wells, so we have tests on those.

1 The other ones, the McElvain 10 should be fine,
2 the Yates well will be worked over, the others I have no
3 idea, no knowledge.

4 Q. Okay. And as far as the cement goes, that has
5 adequate cement coverage in all the proposed injection
6 wells?

7 A. Yes, sir.

8 Q. Have you had any experiences in the EK Queen with
9 any kind of water out of zone or water flows --

10 A. No.

11 Q. -- or anything like that?

12 A. No, not to my knowledge.

13 Q. How soon do you anticipate a response to your
14 injection?

15 A. If you'll look at the projection on the back of
16 -- It's on there. If we start injection in the third
17 quarter of 2003 -- Like I said, most of these conversions
18 and things will happen within 12 to 18 months. You should
19 start seeing some response somewhere in 2006, maybe late
20 2005, and really see a response in 2007 and 2008. This is
21 Exhibit D, on the very back.

22 And we expect somewhere -- This type of flood,
23 the peak production is somewhere around 190 to 200 barrels
24 a day.

25 If you normalized all the Penrose producers back

1 to the one starting date, it was 220-plus. We don't think
2 we'll get quite that high, although with starting all
3 injection at the same time it shouldn't be too much less
4 than that.

5 Q. Now, when you work over or do some work on the
6 eight producing wells, the eight or nine producing wells,
7 do you anticipate that the production will come up
8 somewhat?

9 A. Yes, I do. I think cleaning those wells out will
10 help. They probably haven't been done since the -- Who
11 knows? We haven't.

12 Q. So the initial cost of the project, \$1.8 million,
13 that will be essentially working these wells over and --

14 A. And drilling the wells, that's correct.

15 Q. And what wells are you going to drill?

16 A. We're going to drill that injection well as --
17 Let's see. We're going to drill a producer in the
18 southeast of the southeast of 19.

19 We're going to drill a producer somewhere in the
20 south half, probably, of the northeast of Section 30.

21 We're going to drill an injection well -- it's
22 shown Number 13 on the plan-of-development map, it's in the
23 northeast of the southeast of Section 30.

24 And we'll drill a well -- We may re-enter a
25 plugged-out producer over on this -- in the northwest of

1 the northwest of 30, or drill a well. If we don't think
2 the records would allow us to re-enter the well, we'll
3 drill a well.

4 Q. Okay, and there is fresh water in this area, you
5 said?

6 A. Yes, there is. The Ogallala has been used as
7 water supply on the old Mobil EK Queen flood as well as the
8 flood we operate northeast of there called the Central EK
9 Queen Unit. Both have used fresh water.

10 Q. You have no plans to do that?

11 A. No, sir.

12 EXAMINER CATANACH: Okay, I think that's all I
13 have. Do you have anything?

14 MR. BROOKS: Nothing.

15 MR. CARR: Mr. Catanach, there's a relatively
16 long period of time after they commence injection before
17 they anticipate a response. And in terms of the tax
18 credit, we'd like to be able to notify the Division prior
19 to commencement of injection, so -- and have the project
20 qualified at that time so we'd have as much of the five
21 years as possible to get that response, if that's all right
22 with you.

23 EXAMINER CATANACH: I believe that's standard
24 procedure, Mr. Carr. We can do that.

25 Anything further?

1 There being nothing further in this case -- in
2 these two cases, Case Number 12,964 and Case Number 12, 983
3 will be taken under advisement.

4 (Thereupon, these proceedings were concluded at
5 9:25 a.m.)

6 * * *

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12
13 I do hereby certify that the foregoing is
14 a complete record of the proceedings in
15 the Examiner hearing of Case No. 2964
16 heard by me on January 9 2003.
17 David K. Leland, Examiner
18 Conservation Division
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24
25

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 January 10th, 2003.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006