

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

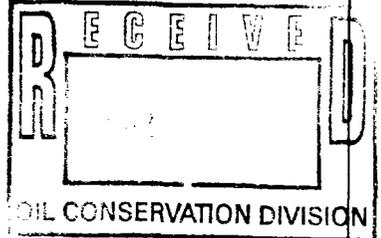
OIL CONSERVATION DIVISION

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

CASE NO. 11,482

APPLICATION OF SDX RESOURCES, INC., FOR)
APPROVAL OF A LEASEHOLD PILOT WATERFLOOD)
PROJECT AND TO QUALIFY SAID PROJECT FOR)
THE RECOVERED OIL TAX RATE PURSUANT TO)
THE ENHANCED OIL RECOVERY ACT, LEA)
COUNTY, NEW MEXICO)

ORIGINAL



REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

March 7th, 1996

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 7th, 1996, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

March 7th, 1996
 Examiner Hearing
 CASE NO. 11,482

PAGE

APPLICANT'S WITNESSES:

CHUCK MORGAN (Engineer)

Direct Examination by Mr. Kellahin
 Examination by Examiner Stogner

7
 25

REPORTER'S CERTIFICATE

31

* * *

E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	8	25
Exhibit 2	10	25
Exhibit 3	16	25
Certificate of Notice	25	-

* * *

A P P E A R A N C E S

FOR THE DIVISION:

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FOR THE APPLICANT:

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 Santa Fe, New Mexico 87504-2265
 By: W. THOMAS KELLAHIN

* * *

1 WHEREUPON, the following proceedings were had at
2 9:00 a.m.:

3 EXAMINER STOGNER: At this time I'll call Case
4 Number 11,482.

5 MR. CARROLL: Application of SDX Resources, Inc.,
6 for approval of a leasehold pilot waterflood project and to
7 qualify said project for the recovered oil tax rate
8 pursuant to the Enhanced Oil Recovery Act, Lea County, New
9 Mexico.

10 EXAMINER STOGNER: Call for appearances.

11 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of
12 the Santa Fe law firm of Kellahin and Kellahin, appearing
13 on behalf of the Applicant, and I have one witness to be
14 sworn.

15 EXAMINER STOGNER: Any other appearances?

16 (Thereupon, the witness was sworn.)

17 MR. KELLAHIN: Mr. Examiner, Mr. Morgan is a
18 petroleum engineer with SDX. He and I are seeking your
19 approval of a waterflood project area to qualify the
20 project for the EOR tax credit. Mr. Morgan has appeared
21 before you in the past to obtain waterflood approval.

22 This particular project is located on Exhibit 1
23 in the center of the nine-section plat, and we're looking
24 to qualify all of Section 7.

25 You'll see that the section is subdivided into

1 other tracts. Those should be ignored, because the entire
2 section has been reconsolidated under the same leasehold
3 basis, and so this would be a leasehold waterflood.

4 Mr. Morgan's plan is to take what is marked as
5 Well Number 5 and use that as his pilot test well, to see
6 if he can obtain satisfactory injectivity results in the
7 Queen-Grayburg-San Andres. And if he's successful, then he
8 proposes to expand the project.

9 Ultimately he's looking to infill drill this
10 project with a new drill in the center among each existing
11 producer, and then to convert each producer to an injector.

12 As part of his plan, we have initially filed a
13 request to have producer number 3, 5, 6 and 7 approved for
14 injection, and then if you approve this project, we are
15 then going to file administrative applications to begin
16 processing the other producers to injectors.

17 We're going to show you a book of C-108 material.
18 It's going to be the white book that I submitted to you.
19 So as not to confuse you, I need to let you know that
20 everything contained in the white book would presume that
21 all wells in Section 7 would be converted for injection.
22 And so at least initially Mr. Morgan is examining an area
23 that is wider in scope than we need to focus on this
24 morning, and he and I will help to try not to confuse you
25 about what you're looking at.

1 In addition, he and I are preparing -- and we
2 apologize for not having it this morning -- we're preparing
3 a better quality nine-section plat so that you can more
4 easily identify the wells within the project and those
5 offsetting the project. We apologize for not having that
6 today, and we hope to use what is marked as Exhibit 1. And
7 then we'll substitute for you a better copy by which you
8 can see in better detail each of the wells.

9 With that introduction, then, I'd like to call
10 and begin discussing this matter with Mr. Morgan.

11 EXAMINER STOGNER: Let me make sure I get this
12 right, Mr. Kellahin.

13 MR. KELLAHIN: Yes, sir.

14 EXAMINER STOGNER: We're seeking at this time the
15 3, 5, 6 and 7 wells for injection, however the Exhibit
16 Number 3 is going to contain additional information
17 concerning injection in some of the other existing wells.

18 Now, is that the complete 108s for each of those
19 wells? Are they contained in this Exhibit Number 3? Or is
20 it just partial information?

21 MR. KELLAHIN: It would be complete information,
22 which has been consolidated as one submittal. You're not
23 going to look at separate C-108s for each of these other
24 wells.

25 What I'm proposing is, while that information is

1 in this book, we might ignore some of it, and we'll focus
2 only on those matters that are relevant for your approval
3 of the four wells that are appropriately before you this
4 morning.

5 I simply wanted you to recognize that the amount
6 of information is wider in scope than would be necessary
7 for your approval of those four wells.

8 EXAMINER STOGNER: So it's not your intention
9 that subsequent wells, if an order is issued just for those
10 four wells -- that this document satisfy the 108
11 requirements for any request for waterflood expansions?

12 MR. KELLAHIN: At your pleasure, Mr. Examiner.
13 Our plan would be to simply file additional C-108s and ask
14 for administrative approval for those additional wells.

15 EXAMINER STOGNER: Okay, that's what I was
16 getting at.

17 MR. KELLAHIN: Yeah.

18 EXAMINER STOGNER: This will not serve as the
19 108s for any expansion of the area. Those will have to
20 stand on their own subsequent to the hearing, but if you
21 want to include them, we can go over readvertisement and
22 such.

23 MR. KELLAHIN: We would prefer to file them
24 subsequent to your action in this matter.

25 EXAMINER STOGNER: Okay. You may continue, Mr.

1 Kellahin.

2 CHUCK MORGAN,

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

5 DIRECT EXAMINATION

6 BY MR. KELLAHIN:

7 Q. Mr. Morgan, for the record, sir, would you please
8 state your name and occupation?

9 A. My name is Chuck Morgan. I'm a production
10 engineer for SDX Resources.

11 Q. On prior occasions, Mr. Morgan, have you
12 testified before the Division and qualified as a production
13 engineer?

14 A. Yes, I have.

15 Q. On prior occasions have you testified with
16 regards to your expertise concerning waterflood operations?

17 A. Yes, I have.

18 Q. And you're familiar with how to file and prepare
19 the necessary information to comply with the Division rules
20 concerning the form C-108?

21 A. Yes.

22 Q. In addition, have you made yourself familiar with
23 Mr. Sirgo's petroleum engineering study of the potential
24 benefit of waterflooding Section 7 in this project?

25 A. Yes, I have.

1 MR. KELLAHIN: We tender Mr. Morgan as an expert
2 engineer.

3 EXAMINER STOGNER: Mr. Morgan is so qualified.

4 Q. (By Mr. Kellahin) Mr. Morgan, let's take a
5 moment and have you look at Exhibit 1 for us and give the
6 Examiner a general summary of your concept and what you're
7 ultimately seeking to do with this project.

8 A. All right. That would be the map here?

9 Q. Yes, sir.

10 A. Okay, basically what we're proposing to do is
11 take this entire section -- there's currently 11 producing
12 wells in it -- and we're going to infill drill it with 12
13 additional infill wells and convert the existing producers
14 to injectors.

15 Part of the process of doing that -- Basically
16 the way we would do it, would be to pick one well,
17 preferably the Number 5 well, convert it to injection, and
18 at the same time we'll drill a couple of -- or shortly
19 thereafter, drill some infill wells around it.

20 This accomplishes several purposes, the first of
21 which is to put a pilot in, the second of which is to get
22 some good logs, good data, current completion practices
23 done, and see what kind of wells we're making on our infill
24 project.

25 Q. This particular project involves what vertical

1 interval or intervals within Section 7?

2 A. Basically Queen and Grayburg.

3 Q. Are those the current producing intervals within
4 Section 7?

5 A. Yes, it is. There is one or two that have a
6 little bit of San Andres open in them, but primarily Queen
7 and Grayburg.

8 Q. When we look at Section 7, is it currently
9 consolidated under one leasehold operation?

10 A. Yes, it is.

11 Q. Helps us understand what's offsetting you in
12 terms of similar operations or production within these
13 intervals.

14 A. We currently have an active waterflood to the
15 west of us, S&J Operating, which is currently under
16 waterflood. To the east, very little production at all.
17 And north and south would be very little production,
18 actually.

19 Q. In Section 12 to the west, is that an operation
20 that is similar to the operation you intend for Section 7?

21 A. Yes, it is.

22 Q. It's a waterflood, and then you're proposing to
23 infill drill and attempt to see if you can get additional
24 oil recovery out of the Queen, Grayburg and San Andres
25 formations?

1 A. Yes, sir.

2 Q. As part of your preparation for hearing today,
3 Mr. Morgan, have you caused notification to be sent to all
4 parties within the notification areas of each of these four
5 proposed injection wells?

6 A. Yes, we have.

7 Q. And we're talking about wells 5, 3, 6 and 7, as
8 shown on the map?

9 A. Yes, we have.

10 And also, in addition, back to an earlier
11 statement here, we did go back and readvertise an area that
12 would cover all of the producers in the section.

13 Q. You're beginning to tell the offsets, then, of
14 your larger plan to potentially flood all of these wells
15 within Section 7?

16 A. Yes.

17 Q. At this point, have you received any objection
18 from any of the offset interest owners that received
19 notification?

20 A. No, we have not.

21 Q. Let me turn with you, sir, to what is marked as
22 Exhibit 2, and before we look at those pages that are of
23 importance, generally describe what it is that we're seeing
24 when we look at Exhibit Number 2.

25 A. Exhibit Number 2 is a reserve study covering the

1 subject property that was done by Victor Sirgo in Midland,
2 Texas, basically outlining estimated ultimate recovery from
3 the existing wells, estimated ultimate recovery from our 12
4 proposed infill wells, and also potential recovery from --
5 secondary recovery from our waterflood. And I believe it
6 also goes into some probable uphole reserves also.

7 Q. Have you informed yourself about the content of
8 Mr. Sirgo's report?

9 A. Yes, I have.

10 Q. Are you in agreement with the conclusions that he
11 has reached in that report?

12 A. I felt like Mr. Sirgo was very conservative on
13 his secondary reserves. He basically used .6 to 1, based
14 on some offset leases. I feel like it should be closer to
15 1 to 1.

16 Q. Other than that observation about the
17 conservative nature in which he's estimated additional
18 recoveries, are you in general agreement with his
19 conclusions?

20 A. Yes, I am.

21 Q. Do you find any flaws in his methodology or his
22 calculations?

23 A. No, I don't.

24 Q. Are you satisfied that he has used reasonably
25 accurate information upon which to base his conclusions?

1 A. Yes, sir.

2 Q. Let me have you turn to page 8 of Exhibit 2, and
3 let's give a general sense to the Examiner of the geology
4 that he's seeing when he examines Section 7.

5 First of all, on Exhibit 8 we're looking at a
6 Grayburg structure map -- I'm sorry, Exhibit 2, page 8.
7 Are you with me?

8 A. Yes.

9 Q. All right. In your opinion, is this a logical
10 area within Section 7 to constitute an appropriate geologic
11 and geographic area for waterflooding?

12 A. Yes, I do.

13 Q. Are you seeing the opportunity for an injection
14 well in Section 7 to have a positive injection response
15 from an offsetting well?

16 A. Yes, I do.

17 Q. How do you see that?

18 A. Basically by the way the geology is laid in
19 there. The nature of these sands, there are numerous
20 members of the Grayburg formation and the Queen formation
21 that are throughout the entire section that would
22 definitely benefit from a sweep in a waterflood operation.

23 Q. Is it unusual to see Queen-Grayburg-San Andres
24 waterfloods?

25 A. No, very common in this area.

1 Q. Let's turn to page 9 of Exhibit 2 and have you
2 show us what we're looking at in that exhibit.

3 A. Okay, these are -- This is a cum map, basically
4 detailing the cumulative production from the existing
5 producers in Section 7.

6 Q. Can you estimate for us what has been the current
7 ultimate primary recovery from Section 7 from the wells
8 that are now producing or have produced?

9 A. You want that by well or the total --

10 Q. No, sir, just give us the project area total.

11 A. Let's see --

12 Q. I believe it was contained in the Application
13 that we filed, Mr. Morgan.

14 A. Yes, it is. Let me look at that. You may have
15 to help me locate that.

16 Q. Let's give the Examiner a status report within
17 Section 7. Currently, how many producing wells do you
18 have?

19 A. We currently have 11 active producers.

20 Q. And what has been the cumulative production from
21 Section 7 as to a certain point in time?

22 A. 301,000 barrels.

23 Q. As of what date? Do you know?

24 A. This was done approximately, I would say, three
25 or four months ago.

1 Q. Okay. Do you have an estimate based upon Mr.
2 Sirgo's engineering work of what the additional incremental
3 oil to be attributed to a positive waterflood response
4 would be?

5 A. Yes, sir.

6 Q. And what number do you project?

7 A. It was 410,000 barrels, I believe.

8 Q. And that is oil in addition to oil that might be
9 recovered from an infill drilling program?

10 A. Yes, it is.

11 Q. And do you have a value for the total cost of
12 that project?

13 A. \$540,000.

14 Q. And do you have an estimate of what the value of
15 that additional incremental oil might be?

16 A. Approximately four, four-and-a-half, four-and-a-
17 quarter million dollars.

18 Q. Describe for the Examiner the basis upon which
19 that calculation is made. What are the assumptions?

20 A. It was made with \$17 oil and using Victor's
21 reserve projections.

22 Q. And it's the assumption that the entire Section 7
23 is converted waterflood?

24 A. Yes.

25 Q. All right. When we look at Exhibit 2, page 10,

1 what are we seeing here?

2 A. That's a cumulative water production map.

3 Q. Do you currently produce water out of these
4 producing wells?

5 A. Yes, we do.

6 Q. What is to be the anticipated source of the water
7 for use in the waterflood project?

8 A. We will use the -- obviously, the water that we
9 are producing. We would like to supplement from other
10 areas. We have leases to the north and east that have
11 produced water we would probably bring in for makeup water.
12 We also operate a waterflood unit, the East Millman Unit,
13 which is nearby, that we could possibly transfer additional
14 water to the unit to use, and we have also considered
15 supplementing with fresh water from Double Eagle.

16 Q. All right, sir. Let's look at page 11 of Exhibit
17 2 and have you describe for us what we're seeing when we
18 examine this isopach.

19 A. This is a cumulative water injection map,
20 basically detailing offset waterflood operations and
21 detailing where and how much water has been injected in
22 offset leases, also showing that no water has been injected
23 into Section 7.

24 Q. All right. Let's now turn to page 18 of Exhibit
25 2, and let's look at the analysis of the potential

1 waterflood secondary oil recovery. Starting on page 18,
2 summarize for us what the conclusion has been and how it
3 was reached.

4 A. The conclusion outlined on page 18 of the reserve
5 study basically details the additional infill locations,
6 basically details the amount of reserves that would be
7 obtained due to waterflooding operations or secondary
8 recovery operations, projected to be 34,000 barrels of oil
9 per location.

10 Q. And in order to get to the 410,000 barrels of
11 incremental oil, you simply multiply the 34,000 per well
12 times the number of potential producers within Section 7
13 that you would have when the project is at its full
14 development?

15 A. Yes, sir, which was 12.

16 Q. All right.

17 A. Twelve additional wells.

18 Q. Okay. Is this a level of productivity you can
19 reach with the current plan of operations?

20 A. No, it is not.

21 Q. In your opinion, is this section appropriate for
22 a waterflood project area?

23 A. Yes, it is.

24 Q. Let's turn to the topic in Exhibit 3, which is
25 the white binder and has the C-108 materials in it. Mr.

1 Morgan, did you compile this booklet?

2 A. Yes, I did.

3 Q. All right. Let's go through the major issues of
4 concern to the Division with regards to these four
5 injection wells, and then as necessary I'll ask you to help
6 us find it in Exhibit Number 3.

7 A. Okay.

8 Q. Let's address the first issue of whether or not
9 within the half-mile radius of any of these four injection
10 wells, if you found any problem wells. Did you find any
11 problem wells within the area of effect of any of these
12 four injection wells?

13 A. Around the four injection wells, no, I did not.

14 Q. All right. Let's describe what we mean by
15 "problem well", that you satisfied yourself that all
16 producing wells had adequate cement across the injection
17 interval and that if you did not have measured cement tops
18 you had calculated tops, and those calculated tops were
19 used under the assumption that you had cement yield of
20 1.32?

21 A. Yes.

22 Q. And that you were using a safety factor of 50
23 percent?

24 A. Yes.

25 Q. All right. Using that criteria, then, you found

1 in all instances the producing wells were adequately
2 cemented?

3 A. Yes, I did.

4 Q. All right. Are there any wells within the area
5 of review that are plugged and abandoned wells?

6 A. Yes, there is.

7 Q. Where would we find them in Exhibit Number 3?

8 A. They would be -- Let's see, in Exhibit C.

9 Q. It says P and A Schematics, Exhibit C.

10 A. Yes, sir.

11 Q. When we turn to those schematics, you have
12 included in this book P-and-A'd wells that would be beyond
13 the scope of these four injection wells, would they not?

14 A. Yes, they basically include all P-and-A'd wells
15 within a half mile of any producer in the section.

16 Q. All right. When you look at the wider area of
17 review, I believe you've located one potential problem area
18 in section 6?

19 A. Yes, I have.

20 Q. And where is this problem well located in Section
21 6?

22 A. That problem well is in the southeast quarter.

23 Q. And what is the nature of the problem with the
24 well in the southeast of the southeast of 6?

25 A. This well was plugged -- Basically, it's been

1 plugged inadequately.

2 Q. All right, but it's outside the half-mile radius
3 of the Number 6 well and therefore not a subject of concern
4 in this case?

5 A. Yes, sir.

6 Q. All right. Did you find that there were any
7 plugged and abandoned wells within the half-mile radius of
8 any of these four injection wells?

9 A. Within the half-mile radius --

10 Q. Yes, sir.

11 A. -- of the four injectors?

12 Q. Yeah.

13 A. Yes, there is.

14 Q. And are they all adequately plugged and
15 abandoned, in your opinion?

16 A. Yes, sir.

17 Q. When we look at the geology, do you see any
18 opportunity that injection water would migrate out of the
19 injection interval?

20 A. No.

21 Q. We don't have any open faulting or hydrologic
22 connections to take the injected water to some other
23 source?

24 A. No, sir.

25 Q. All right. Do you see any opportunity for

1 contamination of fresh water in the area?

2 A. No, I do not.

3 Q. What is the deepest known producing fresh water
4 that's currently utilized within this area?

5 A. About 250 feet. Between 150 and 250 feet.

6 Q. Have all these producing wells had surface casing
7 set below the known fresh water?

8 A. Yes, sir.

9 Q. All right. there's no opportunity, then, for
10 contamination of fresh water?

11 A. To my knowledge, no.

12 Q. Your reinjected water is largely produced water
13 out of these formations?

14 A. Yes, it is.

15 Q. Let's talk about pressure limitations. The
16 Division has a surface pressure limitation of .2 p.s.i. per
17 foot of depth. You're aware of that?

18 A. Yes, sir.

19 Q. What are you going to do for an initial
20 injectivity on your Number 5 well?

21 A. Basically, once we get in a position to inject,
22 we will run a step rate test and come back before the
23 Commission and ask for an increase in the pressure
24 limitation.

25 Q. In the C-108 booklet, Exhibit 3, you have

1 provided data on all the wells within the area of review --

2 A. Yes, we have.

3 Q. -- in tabular form, and that's shown as review
4 area, Exhibit C?

5 A. Yes.

6 Q. Okay.

7 A. Well --

8 Q. Am I looking at the right place?

9 A. Exhibit -- Yes, under Review Area, Exhibit C.

10 Q. Okay. When we look at the first page of the
11 Review Area wells --

12 A. Yes.

13 Q. -- you've indicated in the far right column the
14 top of cement?

15 A. Yes, sir, I have.

16 Q. All right, and you've showed whether it's
17 measured or calculated?

18 A. Yes.

19 Q. What's the significance to you of the indication
20 of top of cement calculated of the 0.75? What's that mean?

21 A. 0.75, I was using an efficiency of 75 percent. I
22 basically did that on newer wells, with current drilling
23 practices, when I knew that to be a very good number to use
24 in the area, due to experience.

25 Q. Are any of the wells that indicate that method of

1 calculation within the half-mile radius of any of these
2 four injection wells?

3 A. I'd have to look at that. I'm sure there is.

4 Q. Okay. So your method is one where the newer
5 wells, then, were subject to a calculation that was
6 different than the 50-percent guideline?

7 A. Yes, sir.

8 Q. All right. Describe again your basis for using
9 75 percent.

10 A. We drilled approximately 20 to 30 wells in the
11 immediate area with modern drilling practices, and when we
12 calculated our cement volumes we used a 20-percent excess,
13 which would be 80-percent efficiency, and that was
14 sufficient to circulate these wells.

15 Therefore, I used 75-percent efficiency to be
16 conservative. And if you'll notice, several of these were
17 in fact circulated, and that number works real well, just
18 through experience.

19 Q. All right. As a production engineer, do you have
20 any reservations that any of those wells, in fact, have
21 inadequate cement --

22 A. No, I --

23 Q. -- across the injection interval?

24 A. No, sir.

25 Q. Okay. Have you been able to estimate or

1 approximate the initial injection volumes that you
2 anticipate for the Number 5 well?

3 A. We anticipate basically that that -- You mean
4 what that well will take?

5 Q. Yes, sir.

6 A. We anticipate probably between 300 and 600
7 barrels a day.

8 Q. And that's the reason to pick that well as a
9 pilot well, then? It's your best well for an opportunity
10 to see the potential injectivity within the formation?

11 A. Yes, sir. And basically its location. It's
12 located near the center of the area.

13 Q. If that well is successful, then, tell me how you
14 propose to further expand the project for full development
15 of Section 7?

16 A. Okay, as mentioned earlier, we plan to, after its
17 implementation, drill some infill wells immediately around
18 it, probably on four sides of it, and probably will convert
19 either the six or seven wells to injection at that time,
20 and see what kind of response we get and where, use that
21 data to continue our development.

22 Q. Mr. Sirgo's report identifies for the Division
23 how he has calculated and what he has concluded for the
24 incremental oil attributed to the infill drilling, has he
25 not?

1 A. Yes, he has.

2 Q. So it's there on Exhibit 2 if the Division would
3 like to look at that?

4 A. Yes, it is.

5 Q. All right. In your opinion, Mr. Morgan, will
6 approval of this Application be in the best interest of
7 conservation, the prevention of waste and the protection of
8 correlative rights?

9 A. Yes, it will.

10 Q. Are you aware of where the nearest source of
11 fresh water is that's being taken from this area, whether
12 it's active windmills or domestic stock tanks that are
13 sourced from water wells?

14 A. Yes, I am.

15 Q. And where would we find those?

16 A. Okay, there is a water well located on the
17 subject acreage. We'll find it in this white book. If
18 you'll let me locate it there, I'll tell you where it's at.

19 Well, I can't seem to locate it. It was included
20 in one of the original -- in the original C-108s.

21 MR. KELLAHIN: All right, sir. With your
22 permission, Mr. Examiner, we'll mark it subsequent to the
23 hearing. It's in the exhibit book.

24 Q. (By Mr. Kellahin) Do you know the approximate
25 location of that water well?

1 Q. That's the Number 1?

2 A. Yes, sir, that one in the very south is Number 1,
3 and the one in the middle is Number 10.

4 Q. Okay. Now...

5 A. They have 8 5/8 intermediate set through the
6 zone.

7 Q. I guess I'm looking at the wrong reference to
8 that one in the southern portion, that deep gas well, on
9 your --

10 A. Number 1?

11 Q. -- area of review, Exhibit C.

12 A. Conoco 7 State Number 1. I believe it's the
13 fourth one from the bottom.

14 Q. I've got a Bass Number 2, fourth one from the
15 bottom.

16 MR. KELLAHIN: He's on the first page of that
17 exhibit.

18 Q. (By Examiner Stogner) On the first page.

19 A. Yes, sir.

20 Q. Okay, here it is. And the 8 5/8 was determined
21 to be at 450, pursuant to a temperature log?

22 A. Yes, sir.

23 Q. Isn't that right?

24 A. No, that's the 7 -- the 13 3/8 surface -- Let's
25 see. Yes, sir, you're reading that right.

1 Q. Okay.

2 A. 8 5/8 was set at 2690 and cemented, and TOC by
3 temperature survey was 450 feet, yes, sir.

4 Q. And there again, in that area of review well, the
5 listing of those, of the injection wells, the four
6 injection wells today, the 5, 7, 3 and 6 --

7 A. Yes, sir.

8 Q. -- is the perforation shown on this list going to
9 also be the injection zone?

10 A. Yes, it is, at this time.

11 Q. What would necessitate the change on that, when
12 you said "at this time"?

13 A. After we drill our four infill wells, basically
14 completing our pilot, we may choose to concentrate on one
15 particular zone or a series of two or three key zones. We
16 may be changing that perforation interval.

17 Q. Would it necessarily change just within that 100-
18 foot, or 170- or whatever that is, interval? Or would you
19 go above it or below it?

20 A. The possibility exists to go either direction.

21 Q. Just anywhere within that Queen-Grayburg area, or
22 would it just stay in the Grayburg formation?

23 A. The Queen-Grayburg.

24 Q. How about the San Andres?

25 A. We don't have any plans at this time to flood the

1 San Andres. The San Andres has been tried in a few zones
2 out here and has proved to be too costly to produce. It is
3 productive, but it's extremely corrosive, and large amounts
4 of water.

5 EXAMINER STOGNER: Okay, I have no other
6 questions of Mr. Morgan.

7 Mr. Kellahin, what were you going to submit to me
8 subsequent to today? Another Exhibit Number 1?

9 MR. KELLAHIN: If you desire, Mr. Examiner, Mr.
10 Morgan and I are preparing a better-quality Exhibit Number
11 1 where you can easier identify the wells. If you're
12 satisfied with this one, then --

13 EXAMINER STOGNER: And you mentioned something
14 else that you were going to --

15 THE WITNESS: The location of the freshwater
16 well.

17 MR. KELLAHIN: We need to find the part of the
18 exhibit book for the location of the freshwater well data.

19 EXAMINER STOGNER: Was that in here?

20 MR. KELLAHIN: It's in there, we just can't put
21 our hands on it right at the moment, Mr. Examiner.

22 EXAMINER STOGNER: It wasn't in my copy. It
23 should be.

24 MR. KELLAHIN: We either submitted it in the
25 C-108s that were filed with the Application -- I thought it

1 was in the exhibit book. If not, we will provide that to
2 you.

3 EXAMINER STOGNER: What I may do, Mr. Kellahin,
4 is go through this Exhibit Number 3 --

5 MR. KELLAHIN: Yes, sir.

6 EXAMINER STOGNER: -- and get rid of all the
7 excess stuff.

8 MR. KELLAHIN: In fact, we'll be happy to do that
9 for you.

10 EXAMINER STOGNER: Okay, consider it done. So
11 therefore there won't be any misconception that a C-108
12 needs to be applied for each well after this Application is
13 approved, and not before, because that's the whole idea of
14 a waterflood expansion, is to expand on an existing
15 waterflood. Now, I know Mr. Kellahin knows this. And
16 since we elected to go with the four wells instead of all
17 of them, I will not expect to see those waterflood
18 expansion applications come in until after the initial
19 order is issued.

20 With that, I'm going to leave the record open on
21 the new map and the water-well information, and --

22 MR. KELLAHIN: With your permission, then, I'd
23 like to temporarily withdraw Exhibit Number 3, and I'll
24 have Mr. Morgan reorganize it for us so that when it's
25 returned to you, you're going to have information only

1 that's appropriate for these four wells.

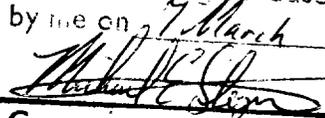
2 EXAMINER STOGNER: That would sure help. It
3 would sure also knock down the time that I would spend
4 writing an order and reviewing this information, and so
5 that all orders from me are issued in a timely manner
6 without me having to go through a bunch of additional stuff
7 and take up time, and it might necessitate the tardiness of
8 an order issued by me in this instance by having to review
9 a bunch of information that doesn't apply in this instance,
10 on any other application, for that matter.

11 With that, let's take a 20-minute recess.

12 MR. KELLAHIN: All right, sir. Thank you.

13 (Thereupon, these proceedings were concluded at
14 9:38 a.m.)

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21 I do hereby certify that the foregoing is
22 a complete record of the proceedings in
23 the Examiner hearing of Case No. 11482,
24 heard by me on 7 March 1996.
25 
Michael W. Stogner, Examiner
Oil Conservation Division

