

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 FASKEN OIL AND RANCH,) CASE NOS. 11,755
 LTD., FOR A NONSTANDARD GAS PRORATION)
 AND SPACING UNIT AND TWO ALTERNATE)
 UNORTHODOX GAS WELL LOCATIONS, EDDY)
 COUNTY, NEW MEXICO)
)
 APPLICATION OF MEWBOURNE OIL COMPANY FOR) and 11,723
 AN UNORTHODOX GAS WELL LOCATION AND)
 NONSTANDARD GAS PRORATION UNIT, EDDY)
 COUNTY, NEW MEXICO)
) (Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

VOLUME II

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

April 4th, 1997

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday and Friday, April 3rd and 4th, 1997, 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.

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I N D E X

April 4th, 1997 (Volume II)
 Examiner Hearing
 CASE NOS. 11,755 and 11,723 (Consolidated)

	PAGE
EXHIBITS (Volume II)	73
APPEARANCES	75
MEWBOURNE WITNESSES (Continued):	
<u>BRYAN M. MONTGOMERY</u> (Engineer)	
Direct Examination by Mr. Bruce	76
Cross-Examination by Mr. Kellahin	92
Examination by Mr. Carr	108
Redirect Examination by Mr. Bruce	125
Examination by Examiner Stogner	129
FASKEN WITNESSES:	
<u>DEXTER HARMON</u> (Geologist)	
Direct Examination by Mr. Kellahin	137
Cross-Examination by Mr. Bruce	160
Redirect Examination by Mr. Kellahin	176
Examination by Examiner Stogner	177
<u>LOUIS LINT</u> (Geophysicist)	
Direct Examination by Mr. Kellahin	178
Cross-Examination by Mr. Bruce	199
Examination by Examiner Stogner	206
TEXACO WITNESSES:	
<u>DAVID A. UHL</u> (Geologist)	
Direct Examination by Mr. Carr	210
Examination by Mr. Bruce	221
Examination by Mr. Kellahin	232
Redirect Examination by Mr. Carr	238
Examination by Examiner Stogner	239

(Continued...)

TEXACO WITNESSES (Continued):

KEVIN BITTEL (Engineer)

Direct Examination by Mr. Carr	241
Examination by Mr. Bruce	247

CLOSING ARGUMENTS:

By Mr. Carr	259
By Mr. Kellahin	264
By Mr. Bruce	267

COMMENTS BY EXAMINER STOGNER	272
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REPORTER'S CERTIFICATE	275
------------------------	-----

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E X H I B I T S (Volume II)

Mewbourne	Identified	Admitted
Exhibit 11	79	91
Exhibit 12	85	91
Exhibit 13	87	91

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Fasken	Identified	Admitted
Exhibit 1	139	159
Exhibit 2	142	159
Exhibit 3	147	159
Exhibit 4	152	159
Exhibit 5	153	159
Exhibit 6	156	159
Exhibit 7	154	159
Exhibit 8	155	159
Exhibit 9	157	159
Exhibit 10	186	199
Exhibit 11	187	199
Exhibit 12	188	199
Exhibit 13	189	199
Exhibit 14	193	199
Exhibit 15	195	199
Exhibit 16	198	199
Exhibit 17	190	199
Exhibit 18	209	209
Exhibit 19	209	209

* * *

E X H I B I T S (Volume II, Continued)

Texaco	Identified	Admitted
Exhibit 1	213	221
Exhibit 2	216	221
Exhibit 3	217	221
Exhibit 4	213	221
Exhibit 5	242	247
Exhibit 6	219	221

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* * *

1 WHEREUPON, the following proceedings were had at
2 8:20 a.m.:

3 EXAMINER STOGNER: This hearing will come to
4 order. We're in consolidated Cases 11,755 and 11,723.

5 I believe we have the third witness for
6 Mewbourne.

7 Mr. Bruce?

8 BRYAN M. MONTGOMERY,
9 the witness herein, after having been first duly sworn upon
10 his oath, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. BRUCE:

13 Q. Would you please state your name?

14 A. Bryan Michael Montgomery

15 Q. And where do you reside?

16 A. In Tyler, Texas.

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

18 A. I work for Mewbourne Oil Company, and I'm the
19 manager of evaluations and reservoir engineering.

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

22 A. Yes, I have.

23 Q. And are you familiar with engineering matters
24 involved in this Application?

25 A. Yes, I am.

1 Q. What materials have you studied on this prospect?

2 A. I've studied in general the production, the logs,
3 the scout tickets, the geology and the reservoir
4 engineering aspects of this area in the Morrow.

5 MR. BRUCE: Mr. Examiner, I tender Mr. Montgomery
6 as an expert petroleum engineer.

7 EXAMINER STOGNER: Any objections?

8 MR. CARR: No objection.

9 MR. KELLAHIN: No objection.

10 EXAMINER STOGNER: So qualified.

11 Q. (By Mr. Bruce) Mr. Montgomery, what is your
12 overall conclusion regarding your firm's well?

13 A. My conclusion is that this is an excellent Morrow
14 prospect. We have a field that has been very prolific, in
15 my opinion, in the Morrow and has been developed on 320-
16 acre spacing.

17 After seeing the new results from a well that we
18 can refer to on the previous exhibit by our geologist --
19 I'm not sure if this is -- which exhibit --

20 Q. Exhibit 8.

21 A. This is Exhibit 8.

22 Q. Eight, yeah, the land plat.

23 A. Try to get everybody back to where we are here.

24 In Section 12, Unit F, a new well was drilled and
25 completed January last year. The public production data

1 shows it came on in April and has made approximately 4
2 million a day, every day, every month since, accumulating
3 about 1.2 BCF, showing to me that 12N to the south, which
4 was completed in similar intervals, did not adequately
5 drain Section 12 and that we have hopes for similar
6 accumulations in Section 1. And as I said, it's an
7 excellent prospect at the location that we have picked out
8 for the Morrow.

9 Q. That Texaco well in Unit F of Section 12 would
10 then be the key well in this area?

11 A. Very much so.

12 Q. What general statements can you make about
13 drainage in this Morrow pool?

14 A. Well, it's been my opinion that I would concur
15 with the NMOCD's findings in previous orders that show that
16 these can drain 250 to 350 acres -- the field has been
17 developed on that spacing effectively at 320 -- and that
18 there are significant reserves in those 320 acres. There's
19 some very good wells out here.

20 These are -- This is an area in the Morrow where
21 there are several pays. We have identified three of our
22 main objectives, but there are others, and these sands come
23 and go through here. So with several pays you get to lower
24 your risk. Prolific production, new well information to
25 the south of us. It just stands out as one of our

1 outstanding prospects, frankly.

2 Q. Are the wells -- Do the wells have variable
3 producible capacity?

4 A. Yes, there are several wells with very high
5 permeability, in my estimate, just through the public data.
6 Looking at the calculated open flows, the DST information,
7 some of these can be very high -- highly permeable, others
8 maybe not so much so.

9 The areal extent is variable, the sand quality is
10 variable. So it's a mixed bag, but it could certainly be
11 very, very productive.

12 Q. Would you please refer to your Exhibit 11,
13 identify it for the Examiner, and discuss the reservoir in
14 the immediate area of Section 1?

15 A. Exhibit 11 is a simple table I put together just
16 of the wells in the immediate area located around our
17 location, proposed location, in 1. These long sections are
18 funny. I think that's 1W.

19 And what I'll start out with is just by
20 identifying this exhibit as a middle Morrow reservoir,
21 statistical sheet of what I conclude are facts.

22 And I have four wells listed here, and for each
23 well I try to show the location by unit designation, the
24 net pay in the middle Morrow reservoir. The initial
25 production date would probably be a better heading there;

1 that's the date of initial production. The initial
2 pressure divided by Z factor, or P/Z, obtained by various
3 means but normally public data. And the estimated ultimate
4 recovery from just the middle Morrow.

5 This -- As I've said before, these wells are --
6 have multiple pays, and it's not unlikely for a well to be
7 completed in one zone, depleted and then recompleted in
8 another; or completed in one zone, recompleted and
9 commingled.

10 Some work was done, some detective work and some
11 analysis on the decline curves with the scout ticket
12 information to try to separate what exactly was the middle
13 Morrow on some of these wells where other zones produce.

14 You can see at 12N I have in the comments MM, LM.
15 That means there was a commingling, in my opinion, of the
16 middle Morrow and the lower Morrow, and I attribute 1500
17 million cubic feet to the middle Morrow.

18 12F is a brand-new well, and I wrote "approximate
19 minimum". I believe that could be much higher, that that
20 well may be a 6-BCF well in the middle Morrow, but it's
21 hard to tell when the well isn't declining. And I don't
22 have two points of pressure to help do some volumetric
23 analysis or some material balance analysis, let me say.

24 So it's a -- It's also trying to show one other
25 thing, that to the south in 11P and 12N and 12F -- and I

1 could have just kept going -- there's prolific production.

2 But there is some risk in going north. In that
3 1P you can see it only made 322 million cubic feet and is
4 thin, thin in the respect it has 10 feet, it doesn't seem
5 that much thinner than 12N or 11P, but maybe to the north
6 that thickness is going to get you that kind of well.

7 So there's some, in my mind, serious risk of
8 going too far north to getting out of the productive Morrow
9 pays.

10 Q. Now, if you get -- Based on what you've looked
11 at, what if you get 10 feet or less of thickness of net
12 pay? Is that bad?

13 A. That could be very detrimental, especially if we
14 were forced to drill too far north.

15 Even at the location we have here, it would
16 probably -- wouldn't be as good of a well as we've seen in
17 these other wells. I expect some pressure depletion in
18 these reservoirs. Even if the net pays are not connected
19 in a strong degree, there's certainly going to be some
20 gross pay that's connected.

21 So ten feet would probably not be as good as we'd
22 hoped for, and we'd like to try to get something better.

23 Q. Okay. Now, you mentioned the well in Unit N of
24 Section 12 as being commingled. Actually, the Morrow is
25 one pool, all of the Morrow is one pool --

1 A. That's correct.

2 Q. -- so it's not strictly commingling?

3 A. Not in the definition, maybe, by the Commission,
4 but in two reservoirs that would have, maybe, different
5 permeabilities or different pressures, and I've tried to
6 break out this Morrow into each reservoir, commingled to
7 that extent, thank you.

8 Q. Okay. Now, can you compare Mewbourne's location
9 to Fasken's proposed location as to the Morrow?

10 A. Yes, I can. I believe theirs -- again, it's
11 strange, these unit designations -- but is at 1T. And
12 referring back to our --

13 Q. -- Exhibit 9.

14 A. -- Exhibit 9, it looks to me -- and I'll try to
15 make it simple first. Geologically, it's thinner,
16 geologically and geographically, I suppose, it's just
17 closer to the poorer wells. There are dry holes, there's
18 this thin well, this old Fasken well that they drilled that
19 we wouldn't be happy with now.

20 And there are many sands that go through here,
21 and you have to pick out which are your main objectives
22 and, if there are competing main objectives, somehow
23 accommodate those. And it just boils down to north is bad
24 and south is good, and it's extremely good.

25 Q. And Mewbourne's well is further south?

1 A. That's correct.

2 Q. In your opinion, should a production penalty be
3 assessed against Mewbourne's proposed well?

4 A. I do not believe so, and I'd like to take that
5 and maybe make it a long answer.

6 In my opinion, there are two concepts for this
7 field and these circumstances where a penalty could be
8 begun to be thought about.

9 One is based on, we just have a 320-acre unit in
10 a field that is set up for 640 acres. But as to that
11 point, the OCD has as much as ordered 320-acre development
12 in their previous rulings.

13 Order R-4157-C and -D conclude in their findings
14 that this field is draining 250 to 350 acres -- I'm
15 paraphrasing here -- and that it approved the 320-acre
16 development, and as we know, then, then, they went back to
17 640-acre but allowed for the 320.

18 Basically, all the other wells in this field are
19 on 320 acres. There's no proration anymore. There's just
20 no reason for a 320-acre unit to be penalized, because it's
21 not in a 640-acre field of this type.

22 And also, I understand Texaco has waived their
23 objection to Fasken's location for a 320 nonstandard unit,
24 so they must not be worried about 320 acres as part of the
25 penalty.

1 Secondly, we're too close to the line, and there
2 are many reasons where we shouldn't be penalized for that
3 reason. Again, some of the same reasons that I just
4 mentioned come up, but let me just restate that the
5 Commission has found, and I concur, that there are several
6 Morrow sands.

7 We don't even know which sands we're really going
8 to be completed in when we complete this well. They may
9 not be the same sands the 12F are in. I would agree that
10 we would hope they probably would be, but we just don't
11 know. How can you penalize somebody before you drill the
12 well when you're not sure which of the several sands that
13 you're going to be producing out of?

14 And these several sands, permeability and
15 drainage area are variable. Look at 12F and 12N. Texaco
16 drilled both wells. 12F was drilled in 1972 or so,
17 produced a bunch of gas out of these zones. And 12F comes
18 on just gangbusters. There's obviously incremental
19 reserves in those sands. Did they impact 12N? If they do,
20 why didn't 12N produce more?

21 So I feel like it's difficult to even talk about
22 a penalty based on too close to the line. But I do have an
23 idea of how that might be accomplished if the Commission so
24 desires, and I have an exhibit to that effect.

25 Q. Before we get into that, if you had two wells,

1 say one in Section 11 -- I mean, excuse me, one in Section
2 1 and one in Section 12, that were as close as they could
3 be at standard locations, how far apart would they be?

4 A. If they were directly north and south of each
5 other, 1650 feet times two, 3300 feet.

6 Q. And how far is Mewbourne's proposed well from
7 Texaco's well in unit F of Section 12?

8 A. 12F will be approximately 3200 feet from our
9 proposed location, which is much further than it is from
10 their own well in 12N.

11 Q. Another matter, Mr. Montgomery: These other
12 operators in the pool, they've had a substantial amount of
13 time to produce their reserves, have they not?

14 A. That's correct.

15 Q. And there have been substantial recoveries or
16 ultimate recoveries from these offsetting sections?

17 A. That's correct.

18 Q. Before we get into what you just referred to,
19 just briefly identify Exhibit 12 for the Examiner.

20 A. 12 or 13 -- I've got two more -- Which one are we
21 talking about?

22 Q. Just identify the AFE exhibit.

23 A. The AFE is Exhibit 12.

24 Q. And what is the completed well cost?

25 A. This is a little bit illegible, so let me read

1 these off. This is \$743,800 to drill and complete a Morrow
2 well at this location.

3 Q. And are Mewbourne's and Fasken's AFEs comparable?

4 A. Yes, as far as Morrow is concerned, yes.

5 Q. Now this is, you know, a fair amount of money.

6 Based on that amount of money, do you need to reduce your
7 risk in this well as much as possible?

8 A. Absolutely. And any penalty that is too extreme
9 would be very detrimental to the economics.

10 Case in point, there's a well at 11P that came on
11 in the middle Morrow at a very decent rate, high rate, but
12 at a steep decline, 70 percent per year.

13 If you're penalized too much and you decline at
14 that rate, you might have an uneconomic condition and it
15 may not be worth the drilling of the well.

16 Q. And then those reserves in Section 1 would go
17 unrecovered?

18 A. That's correct. Right now, I believe we're not
19 -- We're not getting those reserves out, obviously, we need
20 to protect our rights and prevent waste. And I think by
21 drilling the well we'll accomplish both those.

22 Q. Now, you were in the room yesterday, were you
23 not, Mr. Montgomery?

24 A. I was.

25 Q. And did you hear Mr. Carr questioning Mr.

1 Williams about, perhaps, a footage-based penalty?

2 A. I was. I did hear that.

3 Q. And something on the order of 60 percent -- I
4 don't know if that's Texaco's proposal, but that's how I
5 understood it.

6 A. I understood that, and that disturbed me greatly.

7 Q. Do you think that's a reasonable penalty?

8 A. I do not.

9 Q. If a penalty were assessed, do you have a
10 proposal?

11 A. I do. What I believe is, because of the variable
12 nature of these reservoirs that a -- I will call a surface
13 acreage method should be used, and that -- Just bear with
14 me as I go through the Exhibit 13.

15 I've drawn on here two squares that I tried to
16 make 640 acres. And I know Section 1 is actually a little
17 taller and these may not be perfect to scale, but I think
18 the concept is sound.

19 And what I've shown on here is two locations at
20 1600 feet from a common boundary. And if you notice,
21 everything being equal, if two wells were drilled, they
22 would probably meet at that boundary and drain in a fair
23 way.

24 If you move the north half -- the north location
25 south, down to a 660 location, in effect what you do is,

1 you move the line where those two will meet, south of that
2 governmental section line, and you begin to see there will
3 be some encroachment. That calculation is shown on the
4 left.

5 If you add the 660 feet, that you get from the
6 unorthodox location down to the south line, to the 660 feet
7 of a legal location and say that those two together are
8 2310 feet, halfway between there will be at 1155 feet, and
9 that's shown on the left-hand side.

10 You could -- Probably I should have done this,
11 but you could just draw a line about halfway between those
12 two circles, and you'll see an area begin to be encroached
13 upon.

14 It's simple enough to calculate that area. That
15 area is the distance from that governmental line to the
16 midpoint, which is 495 feet. That's that equation 1155
17 minus 660. And if you find the area of that across that
18 mile -- it's not exactly 5280; this section is 4972 feet,
19 so I used that times 495 feet -- you get an areal number of
20 56 acres encroached upon. That's what you're going to
21 outcompete the southern legal location with. Divided by
22 the standard conversion of 43,560 square feet per acre,
23 that gets you that 56-some acres.

24 What I then would do -- and I apologize again for
25 not putting this last equation on here, but I would take

1 320 acres, divided by 320 plus 56.5, and that comes out to
2 about 85 percent.

3 In other words, we need a penalty, at the most,
4 of 15 percent, based on a production penalty. If we are
5 curtailed that amount, we -- everything else being equal,
6 they would be able to outcompete us for that acreage. And
7 that could be done on a six-month test of calculated open
8 flow, limit yourself. If we have a 5- or 10-million-a-day
9 well, that's a serious penalty. But of course we're happy;
10 that's a good well.

11 There will come a time when the calculated open
12 flow would reach a limit to where it's probably not worth
13 testing anymore, you're no longer impacting the offset
14 wells when you have a marginal well, your shut-ins may
15 cause undue costs and damage, you may lose reserves by
16 shutting a well in and swabbing.

17 So at some point you would have to end that
18 testing. I propose a calculated open flow of a million a
19 day, and in a nutshell that's what I think might be a fair
20 way to approach a penalty. But it's so difficult to know
21 what we're going to -- Well, I've gone through the reasons
22 why I don't think there should be a penalty.

23 Q. But -- So you're proposing a 15-percent penalty,
24 but that would assume a couple of things, wouldn't it, Mr.
25 Montgomery? Number one, that you're completed in the same

1 interval as the offset wells?

2 A. That's correct.

3 Q. And it would also assume that your well would
4 have the same producing capabilities as the offset well?

5 A. That's correct, if we got much less perm, even
6 though we had a lot of volume, we shouldn't be penalized
7 for that or we'll never recover what is due ours, even
8 under our section.

9 So it's so hard to tell now, before you drill the
10 well, what the penalty should be that it's difficult to
11 even say there should be one.

12 Q. Now, if a penalty is imposed, would you propose a
13 minimum rate of production that you'd need?

14 A. I would.

15 And I've alluded to that if we do an 85 percent
16 of calculated overflow, that once that calculated overflow
17 reached a million a day that the testing would be over and
18 that we would be allowed to just produce at whatever rate
19 the well will do.

20 The offsetting well to the south has been doing 4
21 million a day for nine or ten months. And, gosh, we hope
22 we have that good of a well, obviously. That's why we like
23 this prospect.

24 And so we feel like, you know, we'd be in great
25 -- and if there was some kind of cap instead of a

1 calculated overflow, we certainly wouldn't want to be much
2 below the 4 million a day, 3.5 million a day. There's a
3 possibility that you'd go on a 70-percent decline like the
4 well in 11P, and if you do that, you don't make that much
5 gas, starting at 3.5 million a day.

6 So I believe that if a penalty is assessed, it
7 should be based on calculated open flow, and it should be
8 of this mile nature of 15 percent, or let's call it 85
9 percent of the deliverability would be our cap.

10 Q. Were Exhibits 11 through 13 prepared by you or
11 compiled from company business records?

12 A. Yes, they were.

13 Q. And in your opinion, is the granting of
14 Mewbourne's Application in the interests of conservation,
15 the prevention of waste and the protection of correlative
16 rights?

17 A. Yes, sir.

18 MR. BRUCE: Mr. Examiner, I'd move the admission
19 of Mewbourne Exhibits 11 through 13.

20 EXAMINER STOGNER: Any objections?

21 MR. KELLAHIN: No objection.

22 EXAMINER STOGNER: Exhibits 11 through 13 will be
23 admitted into evidence.

24 Thank you, Mr. Bruce.

25 Mr. Kellahin?

1 CROSS-EXAMINATION

2 BY MR. KELLAHIN:

3 Q. Mr. Montgomery, for simplicity's sake let me
4 refer to the Texaco wells as the Levers 1 and 2, the 1
5 being the 1970 well, and the Number 2 is the newer one, the
6 1996 well, all right?

7 A. Yes.

8 Q. Is -- Your discipline is as a reservoir engineer?

9 A. That's correct.

10 Q. As a reservoir engineer, did you study to
11 determine if there was any pressure data available on the
12 Levers 1 well?

13 A. Yes, I did.

14 Q. And did you see if there was any pressure data
15 available on the Levers 2 well?

16 A. Yes, I did.

17 Q. And was there any pressure available for either
18 of those wells?

19 A. Yes, I had some scout tickets that gave me some
20 pressures.

21 Q. All right. Are there multiple pressure points in
22 both of those wells available to you?

23 A. There are several pressures listed on the scout
24 tickets for different reasons, flow pressures, shut-in
25 pressures.

1 Q. You've concentrated on your examination using
2 what I believe to be the Morrow green sand package that is
3 shown on Exhibit Number 9 that --

4 A. That's correct, we believe --

5 Q. -- Mr. Williams presented yesterday? That's what
6 we're going to focus on?

7 A. That's what I have focused on --

8 Q. All right.

9 A. -- so far, that's correct.

10 Q. When you looked at the Levers 1 well --

11 A. Yes.

12 Q. -- did you make a decision as to whether that
13 entire sand package in the green sand was perforated in the
14 Number 1 well.

15 A. Let me review my notes.

16 Q. All right.

17 A. Okay, I'm getting prepared. Are we talking now,
18 again, about the Levers Number 1 well?

19 Q. Yeah, the 1970 well, Levers 1, whether this green
20 sand package was perforated through that entire sand
21 interval?

22 A. I show the perforations on -- from public scout
23 data to be 10,290 to -300, 10,312 to -18, and that would be
24 the middle Morrow green or portions thereof, adequate to
25 drain the middle Morrow.

1 Q. All right. The answer to the question is that it
2 did not completely perforate the entire green sand package;
3 is that not true?

4 A. I might disagree with you on just exactly what
5 was perforated if you're talking gross, net, gamma ray,
6 porosity --

7 Q. For purposes of the question, what would you
8 expect to be the original undepleted pressure in that sand
9 package?

10 A. That is very difficult to tell. What I've done
11 is gone through the public data, not being the operator of
12 this well, and pull up information.

13 Luckily, on this well I have some DST information
14 in the lower Morrow, what I'm calling orange and brown
15 sands, but not in the green, unfortunately. And when you
16 do your reservoir engineering and calculations, you need to
17 know how much volume came out of each sand and the
18 pressures of each sand.

19 And there are some holes in the data. I don't
20 think I can pin down that pressure at initial. I have some
21 estimates on a table based on --

22 Q. Based upon the literature, what would you
23 anticipate to be virgin pressure in this green sand
24 interval?

25 A. The virgin pressure in the green sand could

1 easily be 4400 pounds.

2 Q. All right.

3 A. I'm not sure it was a virgin pressure at that
4 well, but 1972 or 1970 it very well could have been.

5 Q. All right. That well produced -- Is it still
6 being produced?

7 A. Yes, to the best of my knowledge that well is
8 still being produced.

9 Q. All right. Approximately 20 years later Texaco
10 adds the Levers 2, in 1996. Is there pressure information
11 on the green sand to tell you what the pressure was when
12 they perforated that sand interval?

13 A. There is a commingled shut-in tubing pressure.

14 Q. Is there any way to analyze that to come to some
15 engineering conclusion about the pressure in that green
16 sand interval?

17 A. There is a way to analyze the pressure to see
18 what the bottomhole pressure was. But to determine the
19 pressure between these two variable sands, it would be
20 difficult to know exactly which pressure -- Not being the
21 operator, there may be other data I don't know about. I
22 would be hard pressed to have an absolute number, but I
23 might have an estimate, and I think I've tried to make an
24 estimate on one of my exhibits.

25 Q. Based upon that, what is your estimate of the

1 pressure in the A sand when it was completed by Texaco?

2 A. The A sand in 12 in the Levers 1?

3 Q. Uh-huh -- No, the Levers 2.

4 A. The Levers 2 has not been completed in the A sand
5 as of yet. The A sand I call the upper Morrow. We have
6 been talking about the green --

7 Q. No, I'm confusing you and me. I'm talking about
8 the green sand.

9 A. The green --

10 Q. All my questions are on the green sand package
11 that you focused your attention on.

12 A. The green sand -- and it's a fairly loose number.
13 I put down here 4100 pounds on my exhibit, and that's based
14 on that shut-in tubing pressure and the feeling that the
15 green sand may have been less depleted than the other two
16 sands, and looking at the logs and a little bit of
17 calculations in those respects.

18 But it's not a hard and fast number. It's really
19 hard to tell.

20 Q. Can you tell one way or another whether there has
21 been interference in this green sand package between the
22 Levers 1 and the Levers 2 well?

23 A. If you had the pressure data, you could talk
24 about pressure interference.

25 Q. Yes, that's my point.

1 A. My thought is that there has been --

2 Q. Okay.

3 A. -- to some small degree, because the well is so
4 strong. It's not going to be a large amount of pressure
5 drainage, or the well wouldn't have been as good in 12F.

6 Q. Let's talk about the performance of the new well,
7 the Levers 2.

8 A. Okay.

9 Q. Based upon pressure data, are you able to show a
10 pressure decline in the Levers 2 well at this point?

11 A. No, I'm not. I --

12 Q. Based upon production data, has that well
13 established any kind of decline in the A -- in this green
14 sand package?

15 A. It looks like it's being choked back and is
16 flowing at constant rate, and maybe we can get some tubing
17 pressures from Texaco later and find out.

18 Q. At this point, then, there is no reasonable
19 engineering data available from which to reach conclusions
20 about the expectation of an ultimate gas recovery from the
21 Levers 2 well in the green sand?

22 A. That's absolutely incorrect.

23 Q. Okay. How are you going to do an EUR if you
24 don't have a production decline established on that well
25 yet?

1 A. What you do is, you look at the whole field, and
2 you look at all the facts.

3 Q. All right, my question was, as to that well --

4 A. I'm coming -- I'm trying to answer it.

5 Q. All right.

6 A. There are typical declines, there are data in the
7 other wells that can be used. First of all, notice 12N
8 produced out of this zone for quite some time, and yet 12F
9 is as strong as it is. If it went on a 50- or 60-percent
10 decline today, I think we'd have this 3-BCF number that I
11 have as an approximate minimum.

12 Q. All right, there's --

13 A. You're right, there's a wide range of numbers
14 we can give this well; I'm not trying to evade your
15 question --

16 Q. Well, let me understand what the decline is.

17 A. -- but I -- Let me finish my point about -- I'm
18 trying to answer that question.

19 Q. What decline rate did you establish, then?

20 A. The decline rate is unknown because it has not
21 declined, but I'd like to finish that other question, if I
22 may.

23 So what I've done is, by looking at all the wells
24 and seeing the performance of the green sand in general, we
25 can get a range of ideas. And I give you the fact that the

1 range is quite large, but in my opinion the middle Morrow
2 green reserves in 12F are substantial, very encouraging
3 well, we'd love to drill this well and get into something
4 like that. We think there's significant reserves left in
5 the green sand. It's tough to pin down.

6 Q. All right. Have you finished your answer?

7 A. Yes.

8 Q. All right.

9 A. Thank you very much.

10 Q. My question, sir, was what decline did you infer
11 for establishing a decline on the Levers 2 well when it
12 doesn't establish a decline for itself?

13 A. I have established no decline for that well.
14 There are a range of declines that would seem reasonable --

15 Q. Which ones did you use?

16 A. -- to give you -- Well, I've used 50- or 60-
17 percent decline, and we may even go to 70-percent decline,
18 as evidenced by 11P, 11 -- So on the -- on that end we have
19 that steep decline.

20 On the upper end it's hard to say how good it
21 could get. But it's not unreasonable, looking at some of
22 these other wells, to think a 30-percent decline might give
23 you substantially more reserves.

24 Q. All right --

25 A. And the average recovery out here in the green

1 sand may be 3 and 4 BCF in these good wells. So I think
2 we're at least that and maybe better.

3 Q. When I look at Exhibit 11 and I find that you've
4 inferred 3 BCF of EUR for the Levers 2 well --

5 A. That's correct.

6 Q. What assumptions are made to get that EUR?

7 A. I don't have the exact number, but it's
8 approximately taking 70 percent, 60 or 70 percent, from
9 current rates and just dropping it straight down like it's
10 all over. And if that's the case, it's not going to be
11 good news. But it hasn't happened yet --

12 Q. What did you use for --

13 A. -- and that's --

14 Q. -- an initial rate?

15 A. The 4 million a day.

16 Q. Okay. And you used an initial pressure of this
17 4100 pounds?

18 A. The initial pressure didn't come into the 3-BCF
19 equation.

20 Q. All right.

21 A. It's just two separate pieces of information.

22 Q. All right. Did you attempt to do any volumetric
23 calculations to determine gas in place in the green sand
24 package?

25 A. Yes, I did.

1 Q. And how did you go about doing that?

2 A. Well, I did my own study prior to these hearings
3 and just in trying to evaluate this prospect. And working
4 with our geologists and some net numbers, I began to
5 develop some what-if scenarios, if you will, on how big
6 this green sand might be.

7 It's very variable and difficult to do, but
8 there's certainly the chance that at even a reduced
9 pressure of 4000 pounds, 3500 pounds, 3000 pounds, if the
10 area is large enough -- and we show some areas that look
11 like the average or substantive areas that we've used
12 earlier on these calculations -- the volumetric numbers
13 could easily be 10 BCF, 8 BCF, 5 BCF, in those ranges --

14 Q. All right, let's look at Mr. Williams's Exhibit
15 9, and show me the container that contains that volume of
16 gas.

17 A. Okay, Exhibit 9 has several pieces to it, and
18 we're going to be talking about the upper -- or the bottom
19 left corner, the middle Morrow green sand net isopach.

20 Q. Yes, sir.

21 A. This is his interpretation, and we worked with
22 this, and I played around with some "what ifs", and so I
23 have a range of numbers. I don't think I'll be able to
24 exactly answer a question, to say exactly how much gas does
25 this exact map have.

1 Q. Mr. Montgomery, all I'm asking you, sir --

2 A. Yes.

3 Q. -- is to describe on this exhibit the
4 container --

5 A. Okay.

6 Q. -- that fits this volume of gas.

7 A. The container here looks to be 320 ares in the
8 proration unit, with other areas outside that, that could
9 contribute to production. There is a 25-foot contour line,
10 a 20-foot contour line, a 15 contour line and a 10-foot
11 contour line, as shown on the exhibit.

12 Q. Using volumetrics, did you calculate the gas in
13 place in the green sand package contained within the
14 subject spacing unit?

15 A. Not off of this map.

16 Q. Okay. Off of any other map do you have an
17 estimate of what the gas in place is for the green sand
18 package within the spacing unit?

19 A. Yes, I would say that there's a range of numbers.

20 Q. All right, what's the range?

21 A. The range of numbers being anywhere from 3 BCF to
22 6 BCF.

23 Q. That's gas in place?

24 A. Gas in place --

25 Q. Okay.

1 A. -- in the green sand. There's several variables
2 that make that range, that magnitude.

3 Q. Let's talk about the proposed Mewbourne location.
4 Has that location always been the location proposed by
5 Mewbourne?

6 A. This -- I'll have trouble, and I may not be able
7 to speak to every location, but I'll be able to speak to my
8 knowledge of the locations that we've thought about here.

9 And I think, if I remember, there were two
10 possible locations that we thought might be attractive:
11 One exactly where it's at, and, let's see, that would be W,
12 1W; and the other location, the 40-acre offset to the west
13 at 1V.

14 Q. Okay. Were there any other locations considered?

15 A. No, sir.

16 Q. Those were the two?

17 A. That's right.

18 Q. Okay.

19 A. That I know of.

20 Q. Let's talk about the current proposed location
21 that Mewbourne has and its relationship in the reservoir to
22 the Levers 2 well.

23 A. Okay.

24 Q. From looking at the isopach, it would appear
25 geologically that the evidence demonstrates the ability to

1 infer a connection in the green sand package between the
2 Levers 2 well and your proposed location?

3 A. That's correct.

4 Q. With that assumption, can you also infer that
5 these two wells in that package would be competing for the
6 same reserves?

7 A. I believe so.

8 Q. Okay.

9 A. And I think they've been doing it for several
10 months, and I wish we could drill a well.

11 Q. No, I meant as to your location and the Levers 2,
12 if your location is drilled and is productive, it's going
13 to compete with the Levers 2 well?

14 A. We think -- That's my opinion.

15 Q. In terms of competition, when you look at wells
16 competing with each other, am I correct in understanding
17 reservoir engineers will use the concept of a no-flow
18 boundary?

19 A. Yes.

20 Q. Okay. Can you estimate for us, based upon your
21 experience and education, where that no-flow boundary would
22 be between the Levers 2 well and the Mewbourne proposed
23 location?

24 A. I began to talk about this on direct, and let me
25 go through that again.

1 These reservoirs, not just the middle Morrow
2 green, are variable, complex. The permeabilities, the
3 thicknesses can do more than what our maps show.

4 But if you just assume constant thickness, or if
5 you assume these maps, you could start to talk about a
6 position about midway between these two wells, if
7 permeability was the same, if -- There are a lot of other
8 ifs to qualify that statement.

9 Q. I understand, Mr. Montgomery.

10 A. Okay, thank you.

11 Q. If we make those assumptions, then, what is going
12 to be the distance of position of that no-flow boundary, if
13 it's equal distance between the two wells? How many feet
14 out, if you will, from the Mewbourne location, going
15 south --

16 A. Uh-huh.

17 Q. -- do we get before we hit the no-flow boundary?

18 A. There is a slight offset in the -- It's not
19 exactly north and south.

20 Using just north and south lines, it's
21 approximately 660 feet plus, I think, 2448, which be about
22 3000, 3100 feet. Since there's a diagonal involved, it
23 would be a few more feet than that. We could certainly sit
24 down and calculate it. But that gets beyond those ifs that
25 I qualified myself. But let's just say 3100 feet, 3200

1 feet, something like that.

2 The total distance, excuse me. The answer to
3 your question --

4 Q. Yeah, you're going to have to divide that in
5 half?

6 A. -- is to cut that in half, that's right, excuse
7 me.

8 Q. So about 1700 feet --

9 A. 17 --

10 Q. -- 1800 feet?

11 A. -- that would be a good number.

12 Q. All right. The setback is 660, so if we use the
13 assumptions thus far the Mewbourne well is going to be
14 taking reserves from the Texaco spacing unit a distance
15 that is the difference between the 1700 and the 660 number?

16 A. No, that's not correct.

17 Q. All right, let me ask you again then. If you're
18 using the no-flow boundary of about 1700 feet --

19 A. Uh-huh.

20 Q. -- and if I subtract the 660 from it, the
21 difference is going to be the drainage component into the
22 Texaco spacing unit?

23 A. Word it again for me, please.

24 Q. Yes, sir.

25 A. I'm sorry.

1 Q. The distance to the no-flow boundary is
2 approximately 1700 feet.

3 A. Okay.

4 Q. Okay? You're going to be about 1100 feet into --
5 Your drainage pattern is going to be about 1100 more feet
6 into the Texaco section?

7 A. Right. But even a 1650 location might get you
8 there because of the distance from that well.

9 Q. All right, sir.

10 A. Already across the line slightly anyway. Even a
11 legal location, they would meet across that line to some
12 degree.

13 Q. All right. When you look at the data within the
14 pool, and we have a range of drainage patterns, assuming
15 circles, of 250 to 350 acres, I believe was your testimony?

16 A. Paraphrasing, that's -- Yeah, something like
17 that.

18 Q. All right. What would be the radius for a
19 drainage circle that contained 320 acres?

20 A. 2106, I believe. These are not circular drainage
21 patterns but --

22 Q. I understand.

23 A. Okay.

24 Q. Is there a water drive component to any of the
25 Morrow reservoirs that are targeted in the spacing unit?

1 the well in the poorer area is, in effect, going to be
2 draining more from the acreage toward the good well?

3 A. Would you state that again?

4 Q. If you look at the well you're proposing 660 from
5 the lease line is in a poorer portion of the reservoir than
6 the offsetting Texaco well. Would you expect there to be
7 radial drainage or elliptical drainage?

8 A. The drainage will follow the channelized -- be
9 more elliptical than radial.

10 Q. And would it not extend farther to the south than
11 to the north, that is, toward the good reservoir?

12 A. We believe the channel does run north and south,
13 so the extension would be that direction.

14 Q. And it would go more toward the good portion of
15 the reservoir than farther north where the reservoir
16 deteriorates?

17 A. It may tend to drain the better portions of the
18 reservoir, more so than the poorer portions. And if you're
19 at a poor portion, you might not get a very large drainage
20 radius to begin with, you get a 40-acre.

21 Q. And that's a factor of the quality of the
22 reservoir under your acreage; isn't that right?

23 A. We do not know the exact quality of the reservoir
24 under our acreage. We hope the quality is fantastic and
25 equal to 12F.

1 Q. But that doesn't override your general
2 characterization that in this area north is bad, south is
3 good?

4 A. Right, just to what degree and how far north is
5 good north.

6 Q. When we look at what you're proposing, you're
7 proposing a well 660 feet from the southern boundary of
8 your acreage; isn't that correct?

9 A. That's correct.

10 Q. Texaco is, in fact, substantially farther south;
11 they're 2400 feet from that common boundary; isn't that
12 also correct?

13 A. That is correct.

14 Q. Do you have an opinion as to whether or not the
15 well in the north half of Section 1 is, in fact, draining
16 reserves from the -- I mean the north half of Section 12
17 is, in fact, draining reserves from the south half of 1?

18 A. I'm concerned that it is. I do not know for a
19 fact if it is or isn't, but I'm concerned that it is.

20 Q. So we have fairly -- the potential for fairly
21 large drainage areas in the reservoir; isn't that fair to
22 say?

23 A. Potential for larger than the 350 feet. But I
24 don't know how large "large" is, because 12N produced for
25 all those years, and if it was thicker, as you're starting

1 to work this argument, to the north of 12N, why didn't 12N
2 do a better job of capturing those reserves around 12F?
3 12F comes on, it's a great well.

4 So things can happen in a hurry. 12F and 12N are
5 closer than our location to 12 --

6 Q. Mr. Montgomery, this will take a very long time
7 if we make additional points and don't just answer the
8 questions. So I'm going to ask you to answer the question
9 that I ask, and if you want to make additional arguments
10 you can do that with your own counsel. Is that agreeable?

11 A. Yes, sir.

12 Q. All right. Now, my question was, initially, you
13 have -- and you answered, I believe, that you see drainage
14 from Section 1 to the Texaco well in 12; is that right?

15 A. No, I see no drainage as of yet out of Section 1,
16 I don't have any well point there to see what the pressure
17 is or --

18 Q. So you're seeing no drainage; you're not
19 concerned that the wells in 12 may be draining, in effect,
20 1?

21 A. I'm concerned that it might. I don't have the
22 data. I have geologic data that suggests it might, I have
23 a Strawn well that suggests it might. I don't have a new
24 well in Section 1 to see what's happening.

25 Q. Are you -- You have looked at pressure

1 information, have you not, on the Levers 1 and Levers 2

2 A. Yes, I have.

3 Q. In fact, there is pressure communication between
4 those two wells, is there not?

5 A. There seems to be a reduction in pressure between
6 the 12N and 12F.

7 Q. Now, you understand this Division is charged with
8 protecting correlative rights, do you not?

9 A. Yes, sir.

10 Q. Do you understand the term "correlative rights"?

11 A. I think I do.

12 Q. All right. Let me read the definition with you
13 for a minute, and I just want to be sure we're on the
14 same -- working the same concept.

15 It's defined in the statute. It says,
16 Correlative rights means the opportunity afforded, so far
17 as it is practicable to do so, to the owner of each
18 property in a pool to produce without waste his just and
19 equitable share of oil or gas or both from the pool.

20 Do you understand that?

21 A. Yes, sir.

22 Q. Now, when Texaco drilled wells in 12, you would
23 agree with me that they were availing themselves of their
24 opportunity to produce the reserves under that acreage,
25 correct?

1 A. Yes.

2 Q. And whoever owned Section 1 at that time had an
3 opportunity to drill wells on their tract; isn't that
4 right?

5 A. Absolutely.

6 Q. And the fact that Texaco developed their acreage
7 some time ago doesn't in any way mean that they should be
8 penalized in the context of a penalty for having gotten out
9 and explored and developed; do you agree with that?

10 A. I agree.

11 Q. Now, when we talk about correlative rights, we're
12 talking about each owner of a pool; you understand that, do
13 you not?

14 A. I think so.

15 Q. And what you're now here trying to do, if I
16 understand it, is produce your just and equitable share of
17 the reserves in the reservoir; is that correct?

18 A. Yes, sir.

19 Q. You realize that that term is also defined in the
20 -- explained in the definition of correlative rights, that
21 is, what is a just and equitable share. Do you understand
22 that?

23 A. That's correct.

24 Q. If we look at the statutory definition, it says
25 that a just and equitable share is the amount, so far as

1 can be practicably determined, and so far as can be
2 practicably obtained without waste, substantially in the
3 proportion that the quantity of recoverable oil or gas or
4 both under the property bears to the total recoverable gas
5 or both from the pool.

6 A. Okay.

7 Q. Now, you understand when we're talking about
8 correlative rights, we're talking about your right to
9 produce what is under your property.

10 A. That's --

11 Q. Do you understand that?

12 A. Yes, sir.

13 Q. All right. Let's go to your Exhibit 13, all
14 right? Now, as we start this, you haven't seen any varying
15 in the reservoir, have you, between your proposed location
16 and the Texaco well to the south?

17 A. That's correct.

18 Q. All right. If we look at your Exhibit 13 we see
19 that you have indicated there is a potential for a standard
20 location in Section 1, 1650 from the common lease line. Do
21 you see that spot, the northmost of the --

22 A. I do.

23 Q. And then we go down and we look at the closest
24 well spot in -- to the north line in 12; that's also 1650
25 from the common line, correct?

1 A. That's correct.

2 Q. Now, let's assume we have comparable reservoir
3 and comparable wells at each of those locations, all right?

4 A. Yes.

5 Q. And if both of those wells are producing, isn't
6 it reasonable to assume that there ought to be a no-flow
7 barrier at approximately the lease line?

8 A. "Reasonable" would be qualified with if it's
9 constant thickness, constant permeability, if everything --

10 Q. And I asked --

11 A. -- was equal, yes, that would be --

12 Q. -- asked you to assume comparable reservoir and
13 comparable wells?

14 A. Yes, sir.

15 Q. Now, if, in fact, we move the well, the northern
16 well, 60 percent closer to the south line, that no-flow
17 barrier is moving south; isn't that correct?

18 A. Under those same conditions, assumptions, yes.

19 Q. And under those assumptions, as it moves south it
20 would, in fact, be recovering reserves not from your
21 property but from the adjoining property; isn't that right?

22 A. That's correct.

23 Q. And you've already told me the Texaco well south
24 of there is potentially draining your acreage, but you
25 don't have any evidence that it is draining in Section 12?

1 A. That's correct.

2 Q. Isn't it fair to say that by moving to the
3 location you're proposing, you're moving the no-flow
4 boundary south and onto the Texaco acreage?

5 A. No, you have to use those qualifications. We
6 don't know the nature of the drainage of 12F -- After
7 seeing 12N, 12F had a very slight communication. It may be
8 there's not a strong communication. But assuming all those
9 perfect, exact properties, then yes, it would just move
10 like I've shown here to a new midway point.

11 Q. And until you drill a well, you don't know what
12 you're going to get in the reservoir, do you, Mr.
13 Montgomery?

14 A. That's correct, we won't know what we'll be
15 producing out of, we don't know the pressure or the
16 communication extent.

17 Q. And so until we know, we have to just operate on
18 some general assumptions; isn't that right?

19 A. That's right.

20 Q. And when we go back to the orders when
21 prorationing was implemented in this pool and the original
22 650 -- 1650 setbacks were adopted -- You've read all the
23 rules governing this pool; isn't that correct?

24 A. I have.

25 Q. And the Division determined that because of the

1 absence of data, the best thing they could do was go with a
2 straight acreage allocation approach; isn't that right, in
3 terms of prorationing??

4 A. Yes, but the prorationing is over.

5 Q. But isn't it true that today, until we have some
6 better data, you can't tell me if there's anything better
7 we can do to determine if there is drainage from the Texaco
8 tract, just within the proximity of the wells one to the
9 other?

10 A. No, I would say using the area that the wells may
11 drain, not the proximity.

12 Q. How do you know the area your proposed well is
13 going to drain until you drill it?

14 A. Well, what we do know is that the Morrow is
15 variable. It is not an infinitely thin, as I would call
16 it, pencil theory; it is not infinitely thin connecting
17 these two wells.

18 So without better knowledge, and because
19 initially, as you said, the pool was set up on surface
20 acres, I determined, since it was multiple pays, surface
21 acres would be the ideal way to do this, to calculate an
22 overlap, to work through the fair and equitable question of
23 that statute.

24 Q. At this point in time, do you know of anything
25 that you can point to that would be more reliable in this

1 reservoir for assessing penalty than the proximity of the
2 wells to each other?

3 A. Yes, I can.

4 Q. And what would that be?

5 A. That would be the areal extent of these
6 reservoirs over this whole field. This whole field is
7 areal extensive. It is not connected by infinitely thin
8 reservoirs where you can just compare the distances. It's
9 just not so.

10 Q. You don't know the areal extent of the reservoir
11 under Section 1 till you drill your well, though, do you?

12 A. Even then you don't know the areal extent.

13 Q. All right. Now, when we look at your proposed
14 recommendation, you're recommending a maximum of 15 percent
15 penalty as the appropriate penalty; isn't that right?

16 A. That's correct.

17 Q. And you want to tie that to a calculated absolute
18 open flow based on a deliverability test; is that not what
19 you're recommending?

20 A. That seems fair to me.

21 Q. Now, have you -- How often do you recommend that
22 deliverability tests be run?

23 A. My recommendation would be every six months, so
24 that you could allow for the declining nature and so that
25 you could not overly test the reservoir.

1 Q. Do you think the 15-percent penalty would
2 effectively restrict the well you're proposing to drill?

3 A. If we decided to put this thing on compression
4 and get after it, we wouldn't be able to do that. Yes.

5 Q. Have you made a comparison of calculated --
6 absolute calculated open flows, those initial pressure
7 readings on wells in this reservoir, and compared that
8 number to what those wells produced during their first year
9 of production?

10 A. No, but I have general knowledge of this --

11 Q. Would it surprise you that the best wells in the
12 pool only produce 50 percent of the calculated absolute
13 open flow during the first year of production?

14 A. No, that seems reasonable, depending on the line
15 pressure, whether they compress or not. There are a lot of
16 options that operators can take to change and get away from
17 the calculated open flow number that their reservoir seems
18 to want to produce.

19 Q. So if a well can only produce 50 percent, the
20 best wells in the pool, with their absolute calculated open
21 flow, a 15-percent penalty based on an absolute calculated
22 open flow would be no penalty at all, would it?

23 A. That's a big "if". I'm not sure the wells could
24 only produce 50 percent.

25 Q. If you assume that as a correct statement --

1 You're an expert, you've been qualified as such. I'm
2 asking you to assume.

3 A. Okay.

4 Q. When you put a well on and it can produce only 50
5 percent of what you can measure the production -- the
6 productive capability of that well has to be, it can only
7 produce 50 percent of that, a 15-percent penalty on the
8 higher number is no penalty at all, is it, if those
9 assumptions are true?

10 A. How can you assume something that doesn't seem
11 reasonable?

12 Q. I ask the questions here.

13 A. I'm sorry, but --

14 Q. If you want me to restate the question, I will do
15 it.

16 A. Go ahead.

17 Q. But the question is, if when you measure a well's
18 ability to produce and you get a number, and then you
19 determine and discover that the well's only produced half
20 of that during the first year of production, the period you
21 want to use before you test again, a 15-percent penalty is
22 no penalty at all?

23 A. We're talking about six months, not a year.

24 Q. All right, let's -- we'll use six months.

25 A. Something is wrong with your calculated overflow

1 or your productive capabilities if that's all you can do.
2 But if -- if, if, if -- you're right, that wouldn't even
3 have any impact at all.

4 Q. And if the poor well is only producing
5 approximately 20 percent of the calculated absolute open
6 flow, you really have no penalty at all?

7 A. You've really got some screwed up data.

8 Q. Now there's some conditions on this penalty that
9 you're recommending, if I understand it.

10 First of all, we have to be in the same zone; is
11 that -- There would be no penalty if the well you propose
12 is not in the same zone as the Texaco well; is that what
13 you're suggesting?

14 A. I'm suggesting that there could be a stray sand,
15 and it clouds the calculation, makes it less likely to even
16 have a penalty if you have these stray sands. There's a
17 behind-pipe sand in the 12F well that we may eventually
18 produce.

19 So it's not just the productive sands, but --
20 possibly productive. It's a difficult question. That's
21 all I was trying to say.

22 Q. If the Levers Number 2 well in the north half of
23 12 does not have the A sand open, and you complete in the A
24 sand, would you believe a penalty should not be applied to
25 your well?

1 A. No, I think it would be fair to apply the same
2 85-percent penalty.

3 Q. And when we're talking about zones, are we
4 talking about the whole Morrow interval, or are we talking
5 about the individual sands, the A, the B?

6 A. The whole Morrow is tough, because we might find
7 a stray that's not included in that well. But it would
8 be -- for simplicity, it would be better to say that -- the
9 Morrow interval.

10 Q. Now, if you make a poor well at your location and
11 can only produce a million a day, is your recommendation
12 that if you fall below the million there's a floor under
13 the penalty; isn't that what I understood you to say?

14 A. I believe that any penalty based on testing of
15 calculated open flow with respect to offset drainage has
16 some ending point inherent based on -- There comes a time
17 when the well may be so marginal that it's hard to shut it
18 in and get it back.

19 If it loads up with water and you have to swab
20 it, that costs money. If it loads up with water and dies,
21 you've wasted reserves just because of the -- trying to be
22 fair and equitable with the drainage. And yet, when you
23 get to these lower numbers there's less drainage also.

24 So I think there's some limit. I throw out a
25 million a day as something reasonable for this high-perm

1 environment, potentially high-perm environment.

2 Q. Do you think your well should be guaranteed a
3 million a day, even if it's in a poor reservoir and it has
4 to drain Texaco to make that million?

5 A. Yes, I do. If we can't produce a million a day,
6 it's going to be hard to make an economic well, the way
7 these may decline. I'd have a hard time giving a penalty
8 that seems so burdensome and so greedy that we were not
9 able to make an economic well and produce significant
10 reserves that we think exist in our proration --

11 Q. Would a million a day be an economic well?

12 A. The first day, you'd make money for sure. But if
13 they decline at 70 percent, you would have lost money on
14 your \$750,000 in a big way.

15 Q. You're asking the Division to guarantee an
16 economic well?

17 A. No, I'm -- the opportunity to drill one, though,
18 to not make the burden so high that we have to just back
19 off.

20 Q. And you would back off if you were not guaranteed
21 a million a day?

22 A. I don't know, I can't speak for my management.
23 But I would have a hard time going back and saying, Let's
24 go drill this well, we've got this penalty and all we can
25 produce is a million a day.

1 Q. Now, you have testified, as Mr. Williams did
2 yesterday, that we have effective 320-acre development in
3 this reservoir; is that right?

4 A. It seems to me that the OCD has put it upon the
5 operators to develop this on 320. I see the historic
6 development is on 320. I just -- It seems obvious that
7 this an effectively 320-acre developed set of sands in the
8 Morrow formation.

9 Q. There is nothing in the rules, however, that says
10 320 is the spacing unit; you're just given an option to put
11 a second well on 640?

12 A. Not in the current rules. There was at one time.

13 Q. And the current rules are the rules we're dealing
14 with, correct?

15 A. We're dealing with the whole history of the
16 development of this field, in my opinion.

17 Q. Not just the current rules?

18 A. Oh, absolutely the current rules, is why we're
19 here today.

20 Q. And that's what we're looking at, isn't it true?

21 A. Yes, sir.

22 Q. And those current rules provide for a setback
23 from the common lease line of 1650 feet, correct?

24 A. That's correct, from the outside boundary.
25 There's no legal location in the 320 unit that you can do

1 that with, you understand.

2 Q. But you are still -- Because of the unit, because
3 of just the facts of what we're dealing with, you're 60-
4 percent closer to that south line than you would be if you
5 were back 1650 from it?

6 A. Yes.

7 Q. And if we had a penalty of 60 percent, and you
8 had a well that could only produce 20 percent of its
9 calculated open flow, you would have no penalty at all;
10 isn't that right?

11 A. That's those big "ifs" again, but I follow your
12 logic and I suppose that would be right.

13 MR. CARR: That's all I have. Thank you.

14 EXAMINER STOGNER: Thank you, Mr. Carr.

15 Mr. Bruce, redirect?

16 REDIRECT EXAMINATION

17 BY MR. BRUCE:

18 Q. Mr. Montgomery, Mewbourne doesn't have the option
19 of putting another well in Section 1, does it --

20 A. No.

21 Q. -- to get two wells on 640?

22 A. That's correct. We have the 320-acre opportunity
23 now to develop this.

24 Q. Now, suppose your well did come in at 2 to 3
25 million a day, and assuming what Mr. Carr said, you can

1 only -- the deliverability is really only 50 percent of
2 that --

3 A. Uh-huh.

4 Q. -- 2, 2.5 million a day, and then a 60-percent
5 penalty is assessed on that, or more. Could you in good
6 conscience recommend that that well be drilled to your
7 management?

8 A. No, I could see a condition where the rate was so
9 low, and with offset data showing that sometimes these
10 wells come on at decent rates and decline at 70 percent,
11 you just can't make any money if they decline that fast and
12 you don't get to start high enough and be competitive with
13 what seems fair.

14 Q. Do you think if you had to produce at, say,
15 500,000 a day, that you could recover this estimated 3 to 6
16 BCF under your unit and still compete with the Texaco well?

17 A. No, that well is producing 4 million a day, and I
18 fail to see why we can't get close to that.

19 Q. You would be producing at one-eighth of the
20 Texaco rate?

21 A. Yeah, 85 -- We might take a cap of 3.5 million a
22 day, and that would seem to be reasonable with the areas I
23 talked about, if it's not a calculated open hole
24 percentage. There are other ways to look at this.

25 But if it's too restricted, the possibility

1 exists that we would make a poor well economically after
2 spending \$740,000 and...

3 Q. 500,000 a day would, in effect, be -- you could
4 say, the 85-percent penalty?

5 A. Depending how you --

6 Q. Compared to --

7 A. -- calculations, right. It would...

8 Q. Now, Mr. Carr is fond of quoting the definition
9 of correlative rights, and I think you heard him say it's
10 the opportunity to produce the reserves. It doesn't
11 guarantee that you get everything under your section or
12 half section or quarter section, does it?

13 A. It's too heterogeneous to even predict that you
14 would.

15 Q. But the definition itself is the opportunity to
16 produce?

17 A. That's the way -- Yes.

18 Q. Okay. Looking at Exhibit 8, the new Texaco well
19 in Unit F, Section 12, Texaco chose that to drill -- They
20 could have drilled further north, couldn't they?

21 A. They could have drilled anywhere on that section.
22 Had they got approval, they could have drilled up to 1650
23 south from the north line, I guess, administratively, but
24 they did not --

25 Q. They could have drilled it -- what? Another 800,

1 900 feet to the north?

2 A. That's correct. I believe they wanted to stay
3 south, near their known production.

4 Q. They stayed south near the well in 12N --

5 A. Yes, they did.

6 Q. -- and they stayed close to that Devon well in
7 11P; is that correct?

8 A. I can't speak for them, but it looks that way on
9 the map, that they expected to have better quality rock at
10 that location. That's why they drilled that location. We
11 can assume --

12 Q. So they didn't have any problem drilling,
13 apparently, close to two wells that have, combined,
14 produced 9 BCF, have they?

15 A. That's correct.

16 Q. And I think what you said is that Mewbourne's
17 well might have some effect on Texaco acreage, but then
18 again it might not?

19 A. That's hard to say at this point in time.

20 Q. But at this time there is a chance that Texaco is
21 already draining your acreage?

22 A. Right, that argument works both ways. Either it
23 is or it isn't, and there's many ramifications.

24 MR. BRUCE: Thank you, that's all I have, Mr.
25 Examiner.

1 EXAMINER STOGNER: Any other cross-examination?

2 MR. KELLAHIN: No, sir.

3 EXAMINATION

4 BY EXAMINER STOGNER:

5 Q. You stated that you've reviewed the past rules
6 and the history of this pool?

7 A. To some degree. I have them with me now, and I
8 have read through them to some degree, yes.

9 Q. When was it prorated, the pool?

10 A. I do not have that in front of me, I'm sorry.

11 Q. Well, in your -- Okay.

12 A. I mean, I -- and I'm not even sure when it was
13 exactly prorated. I remember --

14 Q. But it was prorated, right?

15 A. -- that at one time. I remember reading that
16 there were proration things in the 1970, 1972, initial --
17 whether it was the preliminary or the final, that it was
18 under a time where proration was necessary, and then at
19 some point proration did cease. It's not on the proration
20 schedule now. I don't have a clear history of the
21 proration timetable.

22 Q. Okay. Do you know why it was prorated?

23 A. My guess -- Well, I don't know why. I would say
24 there was probably a supply-and-demand equilibrium of gas
25 in the country, and that if you allow one producer to

1 outproduce another because they are sister companies to the
2 pipeline or they have a different pipe, you could have
3 correlative-right problems, you could have a real problem
4 with that.

5 But once the supply-and-demand equilibrium was
6 restored, everybody -- we needed all the gas we could get.
7 If everybody was allowed to produce wide open, that would
8 also be fair, because then you would be producing as God
9 had made your formations beneath your acreage.

10 But I -- That's not legal, I --

11 Q. Okay.

12 A. -- my -- sense of mine.

13 Q. What are some of the factors other than pipeline
14 take?

15 A. Correlative rights, as we talked about, that
16 works all in there, I would assume, would be important in
17 proration.

18 Efficient recovery, so to not prevent waste. In
19 certain places you can produce too quickly in -- maybe not
20 in volumetric reservoirs like this but -- So that the State
21 can have a way to prevent waste, would be another reason.
22 I may be missing some others.

23 Q. You've reached on the protection of correlative
24 rights, and I want to touch up on that.

25 A. Okay.

1 Q. What are some of the factors that would allow
2 prorationing to offset this correlative-rights issue that
3 you can think of, like -- or would give advantage of one
4 operator over another?

5 A. Proration might be used if ownerships varied, if
6 one operator had some kind of advantage that was unfair and
7 the State said, This is a way we can help make it more
8 fair. There may be more than one ways. And ownership
9 would be involved that -- being correlative rights of
10 working and royalty owners.

11 Q. Wouldn't locations be one of the factors?

12 A. Yes, sir.

13 Q. And how about acreage differentials?

14 A. Yes, sir, assuming it's a good assumption to make
15 in a lot of cases that acreage is directly -- surface acres
16 is directly related to gas in place and those thing. And
17 so when there's proration, when there's reasons for
18 proration, the surface acres should come into play, I
19 think.

20 Surface acres, now, the reason -- the problem
21 with us having a 320 out of a 640 is diminished quite a
22 bit, I think, when proration was lifted. I think that was
23 a very key to that one. Too close to the line still is
24 definitely in play.

25 Q. Okay. Now, when you said that prorationing had

1 ceased or stopped -- what was your words?

2 A. I probably used -- I don't remember. I just
3 don't think that there is proration now, as far as the
4 definition that there is a -- it's a prorated field set up
5 with schedules that I can look on there and see the factors
6 that each well is producing based on, you know, the
7 proration rules.

8 I'm not an expert on New Mexico proration.

9 Q. Okay. Well, in fact, was it suspended or
10 stopped?

11 A. I don't know.

12 Q. Okay. Whatever the case, wouldn't that be a --
13 would this be a good instance to perhaps start it up again?

14 A. I don't think so. Proration, for the reasonings
15 that I see for prorationing, which include correlative
16 rights, prevention of waste, would not apply here, because
17 the field is effectively on 320s.

18 It's not a 640-developed field historically.
19 There are wells on most every 320 out there. Everybody's
20 able to produce their share competitively. Whatever you
21 can do to go out and do it, drill your well, your one well
22 per 320, compress it if you want to, whatever.

23 The proration would stop a lot of that or could
24 change a lot of that, and I -- since the supply-and-demand
25 equilibrium is not there, and as long as we can protect

1 correlative rights and prevent waste, I think the acreage
2 component has diminished substantially.

3 I believe it's the same royalty owner to the
4 north, the 320 to the north is a -- so that made me feel
5 good.

6 Q. Okay. How about the present rules? You said
7 that --

8 A. Yes.

9 Q. -- you could only drill one well on your 320?

10 A. I don't know. I'm not an expert on the rules. I
11 guess you could get a simultaneous dedication. There's
12 ways to bring to the Commission -- ways to work with the
13 rules.

14 But that's the way I generally interpret the
15 rules, that you are able to drill wells on a 640-acre-
16 spaced field, 1650, and there's some other requirements
17 about 330 to the quarter-quarters or something, and that in
18 the history of the rules they went to 320, but when they
19 came back, and where we are now, the way I understand it,
20 they incorporate those findings that say, we think findings
21 -- they list them all, three, four, five, six, there's
22 several of them, that there are many pays, it's
23 heterogeneous, that you will -- you will recover more gas
24 if you go on and drill 320s.

25 So they almost encourage that development, the

1 way I interpret those. I'm not a legal expert.

2 Q. Okay, I'm really not talking about the findings.
3 I'm talking about the rules that are in place now.

4 A. Right, the rules are 640 and 1650.

5 Q. Right.

6 A. And --

7 Q. But what would prevent you from putting two wells
8 on a 320?

9 A. I guess you'd have opposition from other
10 partners, you'd have the problem of, say, augmenting the
11 risk, that you'd share reserves and shoot yourself in the
12 foot and have, potentially, if it's not as thick and
13 productive as other sections to the south, you might drill
14 wells unnecessarily, spend too much money, let's say, for
15 the recovery of what one well can recover and has -- the
16 Commission has shown was reasonable to recover, the 320
17 approximate acres.

18 There may be some other reasons, but those are
19 ones that I have a problem with as far as trying to drill
20 on 160s or two wells per 320 or -- Certainly if the other
21 320 to the north came up, I would say that someone should
22 be able to drill a well up there.

23 Q. Under the present rules, do you know you can
24 drill two wells on that 320?

25 A. I don't doubt that, but I don't know.

1 Q. But what I'm hearing from you is that you would
2 not drill two wells?

3 A. I would not recommend it, I would not recommend
4 it at this time. I'm afraid things are thinning that way
5 and that the recoveries may not be the same as to the south
6 and that you may be interfering with each other and, in
7 effect, making two wells that lose money instead of one
8 well that makes money in the Morrow.

9 I have no problem with other zones up the hole,
10 but in the Morrow I think one well is sufficient.

11 Q. If you were allowed to drill that well, would you
12 object to Texaco drilling 660 off your --

13 A. If we did not have a penalty, I would not -- I
14 think we would be silly to object. I would recommend we
15 not object. I would have a problem with them having two
16 wells going at the same time, I suspect, but it might be
17 that we could negotiate something like that with Texaco.

18 Q. Were you involved in this pool when prorationing
19 was active?

20 A. I don't believe so. I became involved in this
21 pool only very recently, late last year.

22 Q. So you wouldn't know if there was any additional
23 acreage factors instituted on any of the existing proration
24 units that had two wells?

25 A. No, I'm not familiar with anything like that.

1 Q. Are there any other acceptable locations within
2 this 320 acres that would be 1650 off of that southern
3 boundary, that would essentially give Mewbourne the
4 opportunity to produce, according to what you have
5 investigated, the same reservoir options in which you all
6 are hoping to get at this particular location?

7 A. I don't believe so. There are other locations to
8 the south, but not 1650 from the south line.

9 I'm very much concerned about the -- what I call
10 1P, the old Fasken well that made 340 million out of the
11 Morrow, and the general mapping, the geology of the way we
12 interpret this, that going north the risks are just
13 dramatically increased that you will get a well you're not
14 happy with economically and that -- there are reserves in
15 that 320, but the optimum location is in that south
16 portion, the location that we have put forth -- or the one
17 right next to it in V, maybe, 1V, 40-acre offset to the
18 west.

19 I believe we -- Never mind.

20 Q. Now, you were talking about the Fasken well.
21 You're talking about the one that's in Section 1, or was in
22 Section 1?

23 A. In 1P, it did produce out of the Morrow. The
24 middle Morrow green, I think, was the only zone really open
25 several -- several years ago, and has been plugged, made

1 about 340 million over some period of time.

2 EXAMINER STOGNER: Any other questions?

3 MR. BRUCE: No, sir.

4 EXAMINER STOGNER: You may be excused.

5 THE WITNESS: Thank you.

6 MR. BRUCE: I have nothing further in this case,
7 Mr. Examiner.

8 EXAMINER STOGNER: Mr. Bruce rests at this time.

9 Mr. Kellahin?

10 MR. KELLAHIN: Thank you, Mr. Examiner.

11 Call Dexter Harmon.

12 DEXTER HARMON,

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

15 DIRECT EXAMINATION

16 BY MR. KELLAHIN:

17 Q. Mr. Harmon, would you please state your name and
18 occupation?

19 A. My name is Dexter Harmon. I'm the exploration
20 manager for Fasken Oil and Ranch, Limited. I'm a petroleum
21 geologist.

22 Q. On prior occasions have you testified before the
23 Division --

24 A. Yes, I have.

25 Q. -- and in the capacity of a petroleum geologist?

1 A. Yes.

2 Q. And where do you reside, sir?

3 A. Midland, Texas.

4 Q. How long have you been involved on behalf of
5 Fasken in analyzing the opportunity to drill a deep gas
6 well in this particular area?

7 A. My first look at it on behalf of Fasken was in
8 January, late January, when Mewbourne proposed the well to
9 us.

10 Q. As a result of that proposal, did you assimilate
11 all the available geologic information and make an analysis
12 of that information?

13 A. Yes, I did.

14 Q. Did you have access to the same kinds of
15 information that Mr. Williams utilized in his presentation?

16 A. We actually had more information than Mr.
17 Williams utilized. We had a 3-D seismic survey over the
18 section that we could use.

19 Q. As a result of your study and analysis, have you
20 come to certain geologic conclusions about the optimum
21 position in the proposed nonstandard spacing unit in which
22 to locate a well?

23 A. Yes, I have.

24 Q. Is that a location different than the location
25 proposed by Mewbourne?

1 A. Yes, it is.

2 Q. Is it the location that we have referred to on
3 some of Mewbourne's map as the Fasken location?

4 A. Yes, it is.

5 Q. Have you obtained the support of any of the
6 working interest owners in the spacing unit for what we've
7 characterized as the Fasken location?

8 A. Yes, we have. All the working interest owners
9 would like to go in on that well, except for Mewbourne.

10 MR. KELLAHIN: We tender Mr. Harmon as an expert
11 petroleum geologist, Mr. Examiner.

12 EXAMINER STOGNER: Any objections?

13 MR. CARR: No objection.

14 EXAMINER STOGNER: Mr. Harmon is so qualified.

15 Q. (By Mr. Kellahin) Let's take Exhibit Number 1,
16 take a moment and use it as a reference map, Mr. Harmon.

17 If you'll start with an explanation, give us an
18 understanding of the legend at the bottom in terms of the
19 color code and how you've identified the wells.

20 A. Exhibit 1 is a production map of the area,
21 centered on Section 1 of 21 South, 25 East.

22 The color codes are according to the fields that
23 the wells are placed in, and each well above it has the
24 operator name of the well, and then below it or to the side
25 of it the cumulative production from the well, how many

1 years it took to cum, and current rate and, if there's not
2 a current rate, the plug-and-abandonment date.

3 Q. At the proposed Fasken location, what have you
4 determined to be the various formations or reservoirs that
5 have a potential to be developed at that location?

6 A. We see two potential reservoirs, the Morrow,
7 which we've been talking about, and we also see potential
8 in the Cisco formation, which produced to the northwest in
9 the Springs-Upper Penn field.

10 Q. When you compare the Fasken proposed location to
11 the Mewbourne proposed location, do both locations have the
12 opportunity to access the same potentially productive
13 reservoirs?

14 A. No, we don't think that the Cisco potential
15 exists in the Mewbourne location at all.

16 Q. When Mr. Williams was describing the Morrow
17 reservoir, he subdivided it. And we have his presentation.
18 I've shown you a copy of his cross-section, and he
19 subdivided it and correlated it in a particular way.

20 Let me start with you, Mr. Harmon, and have you
21 describe, first of all, whether or not there are any
22 depositional differences as we move from the lowest Morrow
23 to the highest Morrow in this area.

24 A. Okay. In my opinion, the lower Morrow sands in
25 this area are channeled sands, and they trend in a north-

1 to-northwest to the south-to-southeast direction.

2 The middle Morrow sands, that he refers to as
3 green sands, in my opinion, are more marine-influenced
4 sands, and they tend to trend at a perpendicular direction
5 to the lower Morrow sands, being beach sands and near-shore
6 sands and tidal bars and things like that.

7 Q. Let's take a moment and put your cross-section up
8 on the board so -- and give the others an opportunity to
9 unfold it so we can talk about it.

10 EXAMINER STOGNER: While you're doing that, let's
11 take about a five-minute recess.

12 MR. KELLAHIN: All right, sir.

13 (Thereupon, a recess was taken at 9:44 a.m.)

14 (The following proceedings had at 9:54 a.m.)

15 EXAMINER STOGNER: Hearing will come to order.

16 Mr. Kellahin?

17 MR. KELLAHIN: Thank you, Mr. Examiner.

18 Q. (By Mr. Kellahin) Mr. Harmon, you were
19 describing before the break that there are two different
20 depositional environments that affect the Morrow. You were
21 identifying the lower Morrow as being a channel -- the
22 lower portion of the pool, if you will, to be a channel
23 system and the upper portion of the pool or the reservoirs,
24 if you will, to be a beach depositional environment?

25 A. Yes, that's correct.

1 Q. Separate out the areas of the pool where we have
2 those two different depositional environments.

3 A. On Exhibit 2, cross-section A-A', the lower
4 Morrow sands are colored in orange and brown, and they're
5 below the top of the lower Morrow, the stratigraphic datum
6 this cross-section is hung on. The middle Morrow sands are
7 above that, and they're colored in green, blue and purple
8 on this cross-section.

9 Q. Is the top of the lower Morrow the point of
10 separation between the two depositional environments?

11 A. Yes, I believe it is.

12 Q. Let's identify the cross-section wells, the
13 orientation in the wells you've selected to display on the
14 cross-section. This is a stratigraphic cross-section?

15 A. It is a stratigraphic cross-section.

16 Q. Take us through the wells.

17 A. Starting on the A' side of the cross-section, we
18 have the Texaco Levers Number 1 well. I've got a
19 resistivity log, the porosity log, and below that a scout
20 ticket for the well, and then below that a production curve
21 of the well.

22 The Texaco Levers Number 1 well was perforated
23 and completed in the middle Morrow green and blue sands in
24 this cross-section, and the lower Morrow orange and brown
25 sands. And that well produced from those sands up until --

1 you can look on here -- about 1987 or something like that.

2 Q. There's a production plot at the bottom of the
3 log section on the cross-section that gives that
4 information?

5 A. That's correct. You can see where the well went
6 off production. And then they came back up and they
7 perforated this upper Morrow A sand that Mewbourne refers
8 to. And that's where the current production is coming out
9 of with that well.

10 Q. You're referring to the top red dot on that log
11 section, as referring to the upper --

12 A. That's correct.

13 Q. -- A sand interval?

14 A. Yes.

15 Q. And that's where that well is currently being
16 produced from, or is that in addition to the other
17 perforations?

18 A. No, that's the only thing that's open in the well
19 right now.

20 Q. All right. And the vintage, then, of that well
21 is approximately what, sir?

22 A. The upper perfs?

23 Q. Yes, sir.

24 A. About 1991, it looks like, from that --

25 Q. All right, let's go to the next well, the

1 Levers -- what I've called the Levers 2 well.

2 A. The Levers Number 2 was drilled in 1996 by
3 Texaco, and discussions with them were that they perforated
4 the lower sands -- you can see the perforated interval on
5 the scout ticket -- and found a bottomhole pressure of
6 around 1300 pounds. And this other well had been abandoned
7 -- The Number 1 well had been abandoned around 450 pounds.
8 So the lower Morrow sands were depleted, but not as much as
9 the abandonment pressure of the Number 1 well.

10 And then apparently they completed these middle
11 Morrow sands, and they've got the good well that they have
12 today out of those sands. And what they've done in their
13 completion technique is to put a one-way valve between
14 these two sands, to where the lower Morrow sands will not
15 produce any gas until the pressure in these two sands
16 equalize, so that will be around 1300 pounds. And then the
17 lower Morrow sands ought to be able to deliver and support
18 production from the middle Morrow that's currently being
19 produced.

20 Q. Geologically, does it appear reasonable to
21 conclude that in the orange and the brown sands, these
22 lower Morrow sands, that the Levers 2 well was completed in
23 a partially depleted reservoir and that depletion is
24 attributable to the Levers 1 well?

25 A. Yes, it is.

1 Q. When you look at how you have correlated and
2 subdivided the Morrow, have you and Mr. Williams used the
3 identical same correlation markers?

4 A. No, we correlate the wells differently.

5 Q. All right.

6 A. On his cross-section, the well on A-A', the first
7 lower Morrow sand that he comes to he doesn't have labeled,
8 but I have that labeled as my orange sand, which is -- and
9 then the -- and the second well is my brown sand here,
10 which he calls his orange sand. So we correlate these
11 things differently.

12 Q. So as the Examiner reviews the cross-sections, he
13 needs to take care that there is a difference in the way
14 the sands are correlated and identified?

15 A. That's correct, for the lower Morrow and also for
16 the middle Morrow. I break the middle Morrow up into
17 individual sands, as opposed to lumping them together.

18 Q. When Mr. Williams described that Morrow interval,
19 I think he defined it with the green sand color code?

20 A. That's correct.

21 Q. So that green-sand color code, for him, has been
22 subdivided by you into three different intervals?

23 A. His green is actually the green and the blue
24 combined.

25 Q. All right.

1 A. He left out the purple.

2 Q. Okay. Are there any other material differences
3 between the two interpretations that you need to bring to
4 the attention of the Examiner?

5 A. Not at this time.

6 Q. All right, sir. As part of your study, did you
7 prepare a structural analysis of the Morrow reservoir?

8 A. I did.

9 Q. In addition, have you prepared for examination by
10 the Examiner, isopachs of the various intervals within the
11 Morrow that correspond to the color coding on your
12 stratigraphic cross-section?

13 A. Yes, I have.

14 Q. In addition, on your structure map have you
15 interpreted insofar as it's relevant to this spacing unit
16 information from 3-D seismic data?

17 A. Yes, we have.

18 Q. And has that interpretation been made with the
19 assistance of a geophysicist?

20 A. Yes.

21 Q. And is the geophysicist involved in that process
22 Mr. Lou Lint?

23 A. Yes.

24 Q. And Mr. Lint is proposed to be a witness
25 following your testimony?

1 A. That's correct.

2 Q. Do you and Mr. Lint concur on the location, the
3 orientation and the other components of the faulting system
4 as described on your Exhibit Number 3?

5 A. Yes, we do.

6 Q. Let's go to that description. If you'll look at
7 Exhibit Number 3, identify and describe that display.

8 A. Exhibit Number 3 is a structure map on the top of
9 the lower Morrow. This is also the base of the middle
10 Morrow, which is a thick shale interval sitting right above
11 the top of the lower Morrow. That makes it a very good
12 seismic event on our 3-D seismic that's easy to pick and
13 follow throughout this area.

14 The blue outline on this map represents an
15 outline of where we have the seismic-guided structure, and
16 everything outside of the blue outline is subsurface
17 controlled structural picks.

18 You can see on the map a major north-south fault
19 separates the Fasken location from the Texaco location -- I
20 mean from the Mewbourne location -- and it looks like
21 there's at least 100 foot of throw on that fault.

22 Q. All right, let me ask you this: The faulting
23 affects what portion of the Morrow reservoir?

24 A. All of it.

25 Q. The faulting occurred after --

1 A. After deposition.

2 Q. -- deposition of both the lower and the middle
3 Morrow?

4 A. Yes, that's our analysis.

5 Q. And between the Fasken location and the Mewbourne
6 location, what is the distance of vertical displacement of
7 that fault that is located between the two locations?

8 A. We think it's at least a hundred foot.

9 Q. And that is sufficient to display all the
10 reservoirs that are a topic of exploration by both
11 companies?

12 A. Yes.

13 Q. Is there a water component to the reservoir under
14 your analysis? Mr. Williams described for us a concern
15 about water. Have you identified a water component to the
16 reservoir, and is there a concern about water when you look
17 for Morrow production here?

18 A. Yes, I concur with his conclusions.

19 Q. Mr. Williams acknowledged that there's a risk of
20 wet Morrow sands as you move east and downdip. Is that the
21 same direction of structure that you've interpreted on your
22 map?

23 A. Yes, it is.

24 Q. So as you move east, you're moving downdip?

25 A. That's correct.

1 Q. Describe for us the significance of the fault
2 between the two proposed locations. What does that mean to
3 us when we begin to look at the sand reservoirs?

4 A. Well, the Mewbourne has a much lower structural
5 position, and therefore closer to any gas-water contact
6 that might be present and would have less of a chance of
7 recovering any -- less -- it would be -- recover less
8 reserves at that location.

9 Q. When you examined the location of the faults,
10 there is another major faulting event that affects this
11 spacing unit; is that not true?

12 A. That's correct.

13 Q. And the line that I'm describing is the one that
14 runs in the section to the southwest, Section 11, and it
15 runs in generally a southwest-to-northeast direction. But
16 then as it approaches the southern corner, the southwest
17 corner of Section 1, it terminates; do you see that?

18 A. Yes, it dies out.

19 Q. Are you satisfied that it, in fact, terminates?

20 A. Yes, we are.

21 Q. What causes you to reach that conclusion?

22 A. The seismic that we've studied.

23 Q. You saw the structure map and the location of a
24 fault that Mr. Williams displayed on his exhibit?

25 A. Yes, I did.

1 Q. In fact, you have a copy of his structure map
2 before you, do you not?

3 A. I do.

4 Q. Prior to yesterday, you had had a meeting with
5 Mr. Williams on February 26th, did you not?

6 A. We did.

7 Q. And at that meeting Mr. Williams showed you a
8 structure map and the location of a fault, did he not?

9 A. He did.

10 Q. Did the location of the fault between the
11 February 26th meeting and the hearing yesterday change
12 under his interpretation?

13 A. I think he had two different interpretations at
14 that meeting. One, his fault went north of the old Fasken
15 well in Number 1; and the other, the fault went south of
16 it. And he called it his risked and unrisked maps.

17 Q. Okay. The map we saw yesterday, the one we have
18 before us, shows the fault northwest of the Fasken
19 location; the alternative analysis that you saw shows the
20 fault separating the two wells?

21 A. Right.

22 Q. Based upon the seismic information, are you
23 satisfied that you can reach a geologic conclusion of
24 reasonable certainty that there is not a fault that
25 separates out the Fasken location from the reservoirs that

1 are being produced by the Texaco Levers 2 well?

2 A. We see a north-south fault. This area is
3 structurally more complex than Mr. Williams' structure map,
4 and I've described that north-south fault already.

5 Q. All right. So when we look at the Fasken
6 location, you'll be in the same structural configuration
7 that is not separated by a fault system with the Texaco
8 Levers well in the adjoining section to the south?

9 A. That's correct.

10 Q. And that's not true, then, of the Mewbourne
11 location?

12 A. That's correct.

13 Q. Let's turn now and look at the various isopachs
14 that you've prepared. We're going to start with the lowest
15 interval mapped, Mr. Harmon.

16 Again, so that the record is clear and the
17 Examiner has an opportunity of comparison, when we look at
18 what you have coded on Exhibit 4 as your brown sand, is
19 there a corresponding analysis by Mr. Williams as to this
20 sand interval?

21 A. He isopached the lower Morrow brown sand, but we
22 don't necessarily correlate them the same from well to
23 well.

24 Q. All right. Give us a short summary of your
25 conclusions with regards to your Exhibit 4.

1 A. Exhibit 4 represents an isopach map of the lower
2 Morrow brown channels. You can see the northwest-to-
3 southeast depositional trend. This sand has good
4 permeability in places and it's tight in others. There's a
5 lot of variability between the net porosity and the gross
6 sand. This is a gross sand map.

7 The location for the Mewbourne location and the
8 Fasken location are both represented on here in Section 1.
9 They show about the same thickness of sand. However,
10 remember that the Mewbourne location is on the downthrown
11 side of the fault.

12 Q. So when we set aside for a moment the faulting
13 issue that affects the spacing unit, the Fasken location
14 appears to be well within the 35-foot contour line, and the
15 Mewbourne location is within that same contour line but
16 closer to the edge on the eastern boundary?

17 A. On this interpretation, this map, that's --

18 Q. All right, when we look at the brown sand is this
19 a major for your well or for any of -- either well
20 location?

21 A. It was a major producer in the field. Like I
22 said, the Number 1 Levers was depleted down to 450 pounds.
23 The Number 2 Levers had 1300 pounds in it. So as we move
24 north in this sand, we expect more pressure and it is a
25 target.

1 Q. All right. So the advantage here, then, is what,
2 sir? Over the Mewbourne location?

3 A. To stay on the upthrown side of this and --

4 Q. -- farther away from potential drainage?

5 A. Right.

6 Q. All right, let's turn to the next exhibit,
7 Exhibit Number 5. Again, so that we can make contrasts and
8 comparisons to Mr. Williams' presentation, your Exhibit 5
9 is identified by you as an orange sand. Do you have a
10 corresponding map by Mr. Williams?

11 A. No, he did not present one.

12 Q. All right. Identify and describe your Exhibit 5.

13 A. It's really the same story as the brown sand,
14 only it's a more narrow, thinner channel. Depositional
15 strike is a little more northwest than the other one.

16 Both locations look good for sand thickness.
17 However, the Mewbourne location is less attractive because
18 it's on the downthrown side of the fault and thus makes it
19 closer to water, potential water leg.

20 Q. All right, sir. Let's turn to the next display.
21 We're moving out of the Morrow sand channel deposition, and
22 we're now moving up into the three displays that describe
23 potential in a different depositional environment; is that
24 not true?

25 A. That's true.

1 Q. In order to have some opportunity of general
2 comparison, which of Mr. Williams' maps would be an
3 accumulation of your green and your blue map? He's got it
4 on one of his exhibits, I think.

5 A. Yes. His green map lumps my blue and green maps
6 together, which would be Exhibits 7 and 8.

7 Q. Let's have you look at 7 first and have you
8 identify and describe that display.

9 A. Exhibit Number 7 shows a gross middle Morrow blue
10 sand map. General depositional direction is east to
11 northeast.

12 Q. What's the explanation to the fact that this sand
13 is now oriented differently than we saw the channel systems
14 of the lower Morrow?

15 A. These are marine-influenced sands, and they tend
16 perpendicular to the channel systems. They tend to have a
17 shingled depositional look on logs. Practically anyplace
18 you drill out here, you'll get middle Morrow sands. And
19 they don't correlate north-south very well, but on an east-
20 west direction, you can correlate the individual sands.

21 Q. This is one of the sand packages that's being
22 produced by the Texaco Levers 2 well?

23 A. Yes, it is.

24 Q. Your interpretation places that in a different
25 part of the system from the system that you're seeking to

1 access at your location?

2 A. That's correct.

3 Q. At your location, you anticipate to have gross
4 Morrow blue sand, and at the Fasken location it is not
5 present?

6 A. At the Fasken location we predict a lower Morrow
7 blue sand, and at the Mewbourne location we don't have one
8 mapped.

9 Q. Okay. Is this a reservoir that's also affected
10 by the fault?

11 A. Yes, the fault cuts all sands.

12 Q. Let's turn now to Exhibit Number 8 and have you
13 identify and describe Exhibit 8.

14 A. Exhibit 8 is more of these marine-influenced
15 sands. You can see a couple of tidal bars on this that
16 don't have the lateral extent of a channel sand, but they
17 do trend in a perpendicular position to the marine sand
18 deposition. At our location we predict we'll hit a lower
19 Morrow green sand, and we don't have one mapped at the
20 Mewbourne location.

21 However, there are several more sands, lower
22 Morrow sands, that I haven't mapped here, and we do predict
23 that their location will hit some, but not these particular
24 sands.

25 Q. All right. Let's look at the final map. You've

1 got a purple sand map that Mr. Williams did not include in
2 his package. Let me have you identify and describe this
3 one.

4 A. This is Exhibit Number 6. It's the lowermost
5 sand I've colored on the cross-section. It comes into play
6 south of Section 1, and it's productive in five wells on
7 the map.

8 We see it trending through the Mewbourne
9 location, and we'd pretty much be off-trend for it at the
10 Fasken location. However, it hasn't proved productive in
11 that particular trend we have mapped through their location
12 right now.

13 Q. Neither of the two Texaco wells have been
14 perforated in this purple sand package?

15 A. No, they haven't.

16 Q. When we look at the Morrow opportunity, summarize
17 for me, Mr. Harmon, what you see for benefit of the
18 Examiner as to be the preference for the Fasken location
19 over the Mewbourne location.

20 A. We think we'll get similar amounts of sand at
21 both locations. However, their location is on the
22 downthrown side of a major fault. It thus places it closer
23 to any gas-water contacts and thus gives you more risk for
24 the possible reserves you might obtain at that location.

25 Q. To complete the analysis, let's have you look at

1 the B-B' cross-section, which is Exhibit Number 9.

2 At this point we're going to move up into the
3 Cisco analysis, are we not?

4 A. That's correct.

5 Q. This is a cross-section -- or we -- I can't see
6 that far, Mr. Harmon. Is this a -- It's a structural
7 cross-section?

8 A. This is a stratigraphic.

9 Q. Stratigraphic cross-section.

10 A. Hung on top of the Cisco.

11 Q. All right.

12 A. In this cross-section you can see several
13 productive Cisco wells on the left-hand side of the cross-
14 section. The first well has made 1.4 BCF and the second
15 well made 9 BCF out of the Cisco. The perfs are in the
16 very top, and this just demonstrates that there's Cisco gas
17 in the area.

18 Q. When we get to the offsetting well that was
19 drilled in the section to the west, which is that well?

20 A. It would be the third well on the cross-section?

21 Q. How is it named?

22 A. That is the Continental Levers Federal Number 2.
23 That well was also perforated in the dolomite interval at
24 the top of the Cisco and produced some gas. We have a gas
25 show there, in a downdip position.

1 Q. If you as a geologist do not have the benefit of
2 3-D seismic information and are using conventional log data
3 to try to locate a well to take advantage of any Cisco
4 production, are you able to do that?

5 A. I don't believe so.

6 Q. And that's what this cross-section illustrates?

7 A. Yes.

8 Q. You simply can't figure out where to put your
9 well in the spacing unit to take advantage of the Cisco?

10 A. Yeah, you need to be on the very top of the --
11 You can't identify it from subsurface.

12 Q. Give us a general introduction to your strategy
13 and your methodology for identifying the Cisco potential in
14 the spacing unit.

15 A. We hired Lou Lint to -- a consulting
16 geophysicist, to interpret this, because Lou had originally
17 planned and shot this thing for Cisco when he was working
18 with Matador, and he has since gone out as a consultant.
19 So he was familiar with the area, and we needed a quick
20 turnaround on someone that was familiar with it, so we
21 hired Lou to interpret this for us.

22 Q. When you as a geologist are looking for Cisco
23 opportunity here, tell me what you consider to be the
24 trapping mechanism or the container by which potential
25 Cisco gas is held.

1 A. It's mostly a structural play. You need to have
2 a little closure and -- on the order of 50 foot or so.

3 Q. And that's how the seismic information has been
4 utilized, then, is to try to find a high position of Cisco
5 reservoir that has a structural component to it?

6 A. Yes.

7 Q. And within that structural crown or mound, would
8 that constitute a trapping mechanism for any hydrocarbons?

9 A. Yes, it would.

10 Q. In addition to that, then, the seismic
11 information was utilized to definitively locate the
12 faulting system that affected all the Morrow reservoir?

13 A. That's correct.

14 MR. KELLAHIN: That concludes my examination of
15 Mr. Harmon.

16 We move the introduction of his Exhibits 1
17 through 9.

18 EXAMINER STOGNER: Any objections?

19 MR. CARR: No, sir.

20 EXAMINER STOGNER: Exhibits 1 through 9 will be
21 admitted into evidence.

22 Thank you, Mr. Kellahin.

23 Mr. Bruce, your witness.

24 MR. BRUCE: Just let me get these in order, Mr.
25 Examiner.

CROSS-EXAMINATION

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BY MR. BRUCE:

Q. Mr. Harmon, who did you work for before Fasken?

A. Mewbourne Oil Company.

Q. As a petroleum geologist?

A. District geologist.

Q. Now, looking overall at your maps, I think you said you began preparing them in late January. Do you mean January of 1997?

A. Yes.

Q. You hadn't looked at this area before then?

A. No.

Q. How long has Fasken owned an interest in Section 12?

A. I'm not sure. It was back in the Seventies.

Q. Okay. Over 20 years?

A. Yes.

Q. And did most of the development in this Catclaw Draw-Morrow Pool occur during the past -- during the Seventies and Eighties?

A. I believe so.

Q. When did you become aware of Texaco's new well in Unit F of Section 12?

A. When Mewbourne proposed the well to us.

Q. You weren't aware of it before then?

1 A. No.

2 Q. Now, are these your original maps, or do you have
3 any drafts other than these?

4 A. These are my original maps.

5 Q. No drafts, no -- You don't have anything else,
6 preliminary to this?

7 A. These are the original ones that I showed
8 Mewbourne at our meeting on February 26th, and these are
9 the only maps I prepared.

10 Q. Now, let's get to some of these maps, and I'll
11 try to go through them in order.

12 Your production map, looking at that, the Conoco
13 well in the southeast quarter -- well, whatever unit that
14 is, the southeast quarter of Section 2, did that produce in
15 the Morrow?

16 A. They had several tests in the Morrow on that
17 well.

18 Q. What did it produce?

19 A. It did not produce anything down on the pipeline;
20 they had several tests.

21 Q. Okay. And so this figure here for production is
22 from the Cisco/Canyon?

23 A. That's correct.

24 Q. Does the Cisco also produce water?

25 A. It sure does.

1 Q. Do you know how much water this well produced?

2 A. I don't know offhand.

3 Q. What is the current -- What was that well used
4 for after it produced?

5 A. I understand it was a disposal well.

6 Q. Saltwater disposal?

7 A. Yes.

8 Q. How much water was disposed into that well?

9 A. I don't have the figure.

10 Q. Do you know if it was a minor amount, substantial
11 amount?

12 A. I think it was millions of barrels.

13 Q. Is it still being used for water injection?

14 A. I don't know.

15 Q. Has Fasken looked at how far water may have --
16 the injected water may have spread from that well?

17 A. We don't feel like the injected water would
18 spread into the top of the structure.

19 Q. Also on this production map, looking at the next
20 township to the east in the same pool, it's just off the
21 south edge of your map, Section 19, which would be 21
22 South, 26 East, in the northwest quarter there's a well;
23 the Nanbet well is the name. Do you know -- have an idea
24 how much that well produced?

25 A. I'm not familiar with that well.

1 Q. Let's move on to your Exhibit 3, Mr. Harmon.
2 Now, you're showing some faulting there. If that's the
3 case, why did Fasken Land and Minerals elect to participate
4 in Mewbourne's well?

5 A. To what?

6 Q. Why did Fasken Land and Minerals elect to
7 participate in Mewbourne's well?

8 A. To not participate would throw you out of the
9 well.

10 Q. So this faulting you show doesn't mean that it's
11 not productive in the Morrow?

12 A. No, but it is much lower, and you have reserve
13 risk as you get lower in this section.

14 Q. Can you show a reserve risk in other wells from
15 seismic?

16 A. Do you want to elaborate on that?

17 Q. Yeah, has -- You're saying that the faulting
18 shows some reserve risk in Mewbourne's well as compared to
19 Fasken's well; is that correct?

20 A. It shows that their location is structurally a
21 lot lower.

22 Q. Can you show that in any other wells in this
23 area?

24 A. No, I don't know what you're getting at. If you
25 can --

1 Q. Would this north-south or kind of S-shaped fault
2 you show in Sections 1 and 12 -- would that be a boundary
3 for drainage by Texaco?

4 A. I don't know what the throw on that particular
5 fault is. You might ask Lou to estimate that.

6 Q. Well, I believe you testified it was 100 feet.

7 A. Well, I'm talking about the north-south one in
8 the middle of the sections. Are you --

9 Q. That's the one I'm talking about, that's the one
10 I'm talking about.

11 A. Oh, okay, I'm sorry, we're on different faults.

12 Q. I'm talking about that S-shaped fault between
13 Sections 1 and 12, between the proposed Mewbourne location
14 and the Texaco well.

15 A. Okay. And then your question is -- ?

16 Q. Would that be a boundary preventing drainage
17 between Texaco and the Mewbourne well?

18 A. Yes, I think so.

19 Q. Are there any other faults on this -- in this
20 area that aren't shown on this map?

21 A. No, we've put all the Morrow faults on the map
22 that were inside this blue box from the seismic. Outside
23 the blue box, I chose not to put any other faults and just
24 used subsurface contouring.

25 Q. Okay. So you're showing the faults in the blue

1 box; there might be other faults out here?

2 A. There might be.

3 Q. Looking at the well in Section 15 on the
4 southwest corner of your map, it has a minus 07- -- I mean,
5 excuse me, a minus 7028 by it. Is that well wet?

6 A. I believe it doesn't have any sand, some -- like
7 a thin, tight sand in the brown.

8 Q. It's not wet?

9 A. Well, I just have to check. Didn't encounter
10 much sand there.

11 Q. What about the east side of the field? Wells in
12 Sections, say, 5, 6, 7, that area? Are any of those wells
13 wet?

14 A. Yes, they get wet over there.

15 Q. All of them?

16 A. Most of them.

17 Q. The -- Specifically, the three that are on
18 Sections 6 and 7, are they wet?

19 A. I believe so.

20 Q. Let's move on to your Exhibit 4. First, starting
21 with the wells in the township to the north in Sections 33
22 and 34, those two brown-colored wells, are those commercial
23 in the Morrow, or were they?

24 A. The well in Section 33 made 110 million from the
25 Morrow, and it was perf'd in both the middle Morrow and

1 lower Morrow, which is considered noncommercial.

2 The well in Section 34 that's colored brown made
3 654 million from just the brown sand. That is a thick
4 well, and it was perforated just in the top of the brown
5 sand, and the lower portion of that sand is wet up there at
6 that position.

7 Q. Would you drill a well for 654 million cubic
8 feet?

9 A. No.

10 Q. Now, looking at this, in the brown it shows, just
11 in thickness -- By the way, this is a gross map. Do you
12 have a net map?

13 A. No, I don't.

14 Q. Why not?

15 A. Didn't prepare one.

16 Q. Do you think that's of any value at all in this
17 lower Morrow?

18 A. I'm sure it would be.

19 Q. Just looking, now, in Section 1, the proposed
20 Fasken and Mewbourne wells, you have them at approximately
21 the same thickness.

22 A. Yes.

23 Q. But based on this map, Section 1, whether you
24 choose Mewbourne's location or Fasken's location is better
25 than Texaco's wells, are they not?

1 A. That's correct.

2 Q. Does that mean that Texaco's well could be
3 preferentially draining Section 1?

4 A. I don't think so.

5 Q. Now, I think you said that the Unit F Section 12
6 well was severely depleted in the -- in the lower Morrow?

7 A. It is depleted. Our conversations with Texaco
8 indicated it had --

9 Q. Why would it be so depleted if there's a -- what
10 you show as a pretty good reservoir to the north?

11 A. I think the further you go away from this Number
12 1 well, the higher pressures you'll encounter in those
13 lower Morrow sands.

14 Q. And although you don't have it on here, you would
15 have a fault between the -- that S-shaped fault between the
16 Texaco well and the Mewbourne location in this sand?

17 A. Between the -- There's a fault between the
18 Mewbourne location and the Texaco Number 2 well.

19 Q. Could that result in pressures being virgin or
20 substantially higher at the Mewbourne location?

21 A. I think it would.

22 Q. Let's move on to your Exhibit 5, Mr. Harmon.
23 Again, this is a gross map. Did you ever prepare a net
24 map?

25 A. I did not.

1 Q. Or are these figures you have by the well net and
2 gross, or are they just -- the Fasken well in -- the
3 existing -- the previously drilled Fasken well in Section
4 1, you have 0, 12; what are those?

5 A. The legend says the net porosity greater than or
6 equal to 8 percent over gross sand, so I gave that well no
7 porosity greater than 8 percent and 12 foot of thickness --

8 Q. Okay.

9 A. -- lower Morrow orange sand.

10 Q. Once again, would this map show that Mewbourne's
11 location is as good or better than Fasken's location in
12 Section 1?

13 A. For sand thickness, but not structurally.

14 Q. And once again, because of this faulting you
15 claim Mewbourne's location could be pressure-separated from
16 the Texaco wells?

17 A. That's certainly possible.

18 Q. Once again, could -- because you show a greater
19 thickness to the north, could Texaco wells be
20 preferentially draining Section 1?

21 A. In these lower Morrow sands, I do think you have
22 longer areas that drain, and I wouldn't be surprised, even
23 at the Fasken location, to find a -- a less of a pressure
24 there than virgin.

25 Q. Okay. But because of the way you map the

1 reservoir, really, Texaco would have more of an effect on
2 Section 1 than a well in Section 1 would have on Texaco?

3 A. Correct.

4 Q. Section 6, Mr. Harmon --

5 A. Map 6?

6 Q. -- this -- And I'm sorry, I wasn't listening at
7 the time. Do you think the purple sand is -- your purple
8 sand is prospective in Section 1?

9 A. I think we'll find some there, yes.

10 Q. Okay. And Mewbourne's location has potentially
11 thicker sand?

12 A. Yes.

13 Q. Let's move on to your Exhibit 7. Looking at your
14 Exhibit 7, first off, you have 10 feet in Fasken's old
15 Section 1 well, you have -- in the Texaco wells you have 14
16 feet and 6 feet. I mean, they're equivalent. Why was the
17 Fasken well not better than it was, in your opinion?

18 A. Just didn't have the permeability.

19 Q. Would it be best to, as a result, kind of stay
20 away from that well as much as possible?

21 A. I wouldn't want to twin it.

22 Q. Now --

23 EXAMINER STOGNER: Excuse me, what was that?

24 THE WITNESS: I would not want to twin that well.

25 Q. (By Mr. Bruce) Can you give us an idea of how

1 far away you would prefer to remain from that well?

2 A. I don't have an estimate.

3 Q. There's some, you know, deep tests over to the
4 northeast, you know, in Section 5 and Section 31. How come
5 you didn't include these in your mapping?

6 A. I was just mapping the area surrounding Section
7 1, and I just didn't extend it that far.

8 Q. What thicknesses do those wells have in the blue
9 sand?

10 A. In Section 5?

11 Q. Sure.

12 A. One well on the map has 7 over 14, 7 percent -- I
13 mean 7 foot of net porosity greater -- equal to 8 percent,
14 over a gross sand of 14 percent. I didn't put the numbers
15 for the other two wells.

16 Q. Do you know what they are? Do you have them in
17 your notes?

18 A. I've got log sections, and I could look them up
19 if you want me to do that.

20 Q. If it wouldn't take too much time, sure.

21 A. Well, the Location G of Section 5 looks like it
22 has 10 foot of blue sand, gross.

23 Q. Which one? Ten feet?

24 A. Ten feet.

25 Q. Okay.

1 A. None -- No net.

2 And the well in Section -- in location F looks
3 like it has 6 foot of gross sand, and 4 foot of that is
4 net.

5 Q. I'm sorry, Mr. Harmon, but I don't understand why
6 you then show -- you've got a -- In Section 5 you've got 6
7 foot and 14 feet, and then just right in between them you
8 put the zero line.

9 A. I have a zero point in Section 6.

10 Q. Is it contoured correctly?

11 A. I believe it is.

12 Q. So even with 6 and 10 feet, you still --
13 everything north of -- you've got the northern two-thirds
14 of Section 5 as zero?

15 A. I really wasn't focusing on Section 5 when I made
16 this map. I don't even have, you now, numbers on those
17 wells.

18 Q. Oh, okay, looking at Section 2 you've got 3 and 4
19 feet, 3 net, greater than 8 percent, and 4 feet gross in
20 the well in the southeast quarter of Section 2. Is that
21 well prospective in this interval?

22 A. No, I think it's too thin to be productive.

23 Q. Well then, how come you're moving closer to that
24 well?

25 A. We've spotted our location to be on the upthrown

1 side of that major Morrow fault, and also to stack the
2 Cisco pay.

3 Q. Is your location based more on the Morrow or on
4 the Cisco?

5 A. Both.

6 Q. Equally?

7 A. Yes. Well, let me --

8 Q. Then how come -- Go ahead.

9 A. Let me rephrase that. Our location, we think,
10 has an equal chance at the Morrow, but it is spotted for a
11 Cisco location. We really can't move it from that spot or
12 we'll miss the Cisco.

13 Q. And the nearest Cisco producer was uneconomic?

14 A. Right, there's a gas show in Section 2, in the
15 southeast quarter, and then there are producing wells in
16 the northwest quarter of Section 2.

17 Q. Let's move to your Exhibit 8, then. We're almost
18 through this.

19 Once again, looking at the Fasken well, the
20 existing Fasken well in Section 1 and comparing it with
21 some of these other green producers, has similar
22 thicknesses. Once again, why is the Fasken well not better
23 than it was?

24 A. It's a tight well, low permeability.

25 Q. Now, you've said you've got northeast-southwest-

1 trending sands in this area, but then you've got -- over on
2 the east side, you've got two clumps of sand that are
3 northwest-southeast.

4 A. Right, and I interpret those to be tidal bars.

5 Q. What's that?

6 A. Tidal bars.

7 Q. It's a complex system, isn't it?

8 A. Yes, it is.

9 Q. And it could well be that Mr. Williams is right,
10 that it trends more north-south than you have it,
11 connecting the Fasken well and the Texaco wells to the
12 south?

13 A. Mr. Williams is welcome to his opinion. I've
14 correlated these logs and mapped them the way I saw them.

15 Q. Now -- Mr. Harmon, it seems that all the maps
16 we've gone through show that Mewbourne's well is a better
17 location in the Morrow than Fasken's well. Would you agree
18 with that?

19 A. No, I wouldn't.

20 Q. Could you explain that?

21 A. I believe our location is on the upthrown side of
22 a major fault, and theirs is on the lower side, and thus
23 closer to any gas-water contacts.

24 Q. Where -- you know, what -- Where are the gas-
25 water contacts?

1 A. I believe Mr. Williams testified yesterday he
2 felt like there's a gas-water contact at 7160, wasn't it?

3 Q. You'd agree with that?

4 A. Sounds reasonable.

5 Q. Okay, and that would be to the east of Section
6 1 --

7 A. Yes.

8 Q. -- roughly?

9 What is -- Does Fasken have a track record out
10 here on Morrow exploration results based on 3-D seismic?

11 A. I don't believe we've done any exploration on 3-D
12 seismic in the Morrow.

13 Q. What about in the Cisco/Canyon?

14 A. No, we have not.

15 Q. Now, this seismic was -- Is it Fasken's, or is it
16 Matador's?

17 A. It's Matador's seismic.

18 Q. Have they drilled any other Cisco/Canyon wells
19 out here, based on that seismic?

20 A. On this seismic survey? No.

21 Q. How about any others to the north of here?

22 A. I believe they did.

23 Q. Were they successful?

24 A. I don't think so.

25 Q. Now, if in the event Fasken's well is first

1 drilled and you encounter Cisco/Canyon and Morrow pays, how
2 would you produce those two zones?

3 A. I don't have a plan right now.

4 Q. So you don't know which one you would produce
5 first?

6 A. You know, we would drill stem test all the zones
7 and we would make an appropriate response after we had
8 drilled it and saw what we had.

9 Q. Is your AFE set up for dual completion in the two
10 zones?

11 A. I don't know.

12 Q. If you completed in the Morrow first, would there
13 be any jeopardy to the Cisco reserves because of the
14 offsetting saltwater disposal well?

15 A. I don't believe so.

16 Q. If you completed the Cisco first, would you be in
17 danger of being drained by the Texaco Morrow well in
18 Section 12?

19 A. At some point in time you might.

20 Q. Could you commingle them in the wellbore?

21 A. I don't know. It would just depend on what we
22 found.

23 Q. Does the Texaco well in Unit F of Section 12
24 encourage you about the Morrow prospects in this area?

25 A. Yes.

1 Q. Don't you think it would be a little closer to
2 that well?

3 A. I think it would be better to be on the upthrown
4 side of that fault.

5 Q. But you've just testified that the Mewbourne
6 location probably wouldn't be drained because it's on the
7 downthrown side?

8 A. That's correct, and I also testified it's
9 probably closer to water. There may not be as many
10 reserves at that location.

11 Q. If Mewbourne's well is approved by the Division,
12 will Fasken drill it?

13 A. Yes.

14 MR. BRUCE: That's all I have, Mr. Examiner.

15 EXAMINER STOGNER: Thank you, Mr. Bruce.

16 Mr. Carr, your witness.

17 MR. CARR: I have no questions.

18 EXAMINER STOGNER: Redirect, Mr. Kellahin?

19 MR. KELLAHIN: Just a few, Mr. Examiner.

20 REDIRECT EXAMINATION

21 BY MR. KELLAHIN:

22 Q. When you look at the seismic data, Mr. Harmon, is
23 there any probability of encountering one of these Cisco
24 mound traps at the Mewbourne location?

25 A. No, not at all.

1 Q. In order to have an opportunity to access the
2 Cisco at the Fasken location, is it necessary to also have
3 the potential for the Morrow reservoirs as well?

4 A. Yes, we feel the Cisco is too risky to drill for
5 by itself.

6 Q. And that the Mewbourne location is too risky
7 because it's downstructure and closer to water?

8 A. That's correct.

9 Q. So when you're combining the multiple
10 opportunities for Cisco and all Morrow reservoirs, your
11 preference is for the Fasken location?

12 A. That's correct.

13 Q. That, in your opinion, is the most prudent thing
14 to do?

15 A. Yes.

16 MR. KELLAHIN: That concludes my examination of
17 Mr. Harmon.

18 EXAMINATION

19 BY EXAMINER STOGNER:

20 Q. The fault that you show in Exhibit Number 3, does
21 that affect the Cisco, or does it go through the Cisco or
22 include the Cisco?

23 A. No, it doesn't.

24 Q. So the Cisco is deposited over that fault?

25 A. Yes. It influenced -- Well, never mind.

1 Q. What's the relationship of that 7100-foot contour
2 line, subsea 7100, and that fault? What kind of
3 relationship is there?

4 A. That's just the structural relationship of where
5 that lower Morrow is at. I don't think there's anything
6 special about the --

7 Q. Okay. Now, you come to the conclusion about this
8 fault from seismic data; is that right?

9 A. Yes, sir.

10 Q. Is that 3-D seismic or just --

11 A. Yes, it is.

12 EXAMINER STOGNER: I have no other questions of
13 this witness. He may be excused.

14 MR. KELLAHIN: Mr. Examiner, we'll call at this
15 time Mr. Lou Lint. Mr. Lint is a geophysicist.

16 LOUIS LINT,
17 the witness herein, after having been first duly sworn upon
18 his oath, was examined and testified as follows:

19 DIRECT EXAMINATION

20 BY MR. KELLAHIN:

21 Q. Mr. Lint, for the record, sir, would you please
22 state your name and occupation?

23 A. My name is Louis Lint. I'm a geophysical
24 consultant.

25 Q. Summarize your education and your background,

1 sir.

2 A. I graduated from the University of Kansas in 1978
3 with a BS in geophysics and a BS in geology.

4 Q. Summarize your employment for us.

5 A. I've got just over 18 years of employment as a
6 professional geophysicist. I've worked for major oil
7 companies, large independents and small independents and am
8 currently a consultant.

9 Q. Where do you reside, sir?

10 A. Midland, Texas.

11 Q. Were you involved in the geophysical study that
12 we've characterized as the Matador 3-D seismic data?

13 A. Yes, I was. I designed the original shoot and
14 supervised the acquisition and processing and interpreted
15 the original data set.

16 Q. And based upon that data set and all that
17 information, your experience, education and knowledge, do
18 you now have conclusions, recommendations and opinions for
19 the Examiner?

20 A. Yes, I do.

21 MR. KELLAHIN: We tender Mr. Lint as an expert
22 geophysicist.

23 EXAMINER STOGNER: Any objection?

24 MR. CARR: No objection.

25 EXAMINER STOGNER: So qualified.

1 Q. (By Mr. Kellahin) Mr. Lint, let's look at Fasken
2 Exhibit 3. Yesterday Mr. Williams testified that he
3 acknowledged a substantial risk in the Morrow moving
4 downstructure and being in proximity to water. That
5 conclusion is shared and confirmed by Mr. Harmon this
6 morning.

7 Mr. Williams testified that the lowest known gas,
8 yesterday, was minus 7160 and that the gas-water contact,
9 based upon wells to the east, was somewhere in the 7180 to
10 7263 range.

11 With that information, Mr. Lint, where on the
12 structure, based upon the seismic data, would you find the
13 Mewbourne location in relation to the gas-water contact?

14 A. My estimation is the top of the lower Morrow
15 marker will be encountered at a minus 7150 at the Mewbourne
16 location and at approximately a minus 7050 at the Fasken
17 location, approximately 100 foot of difference.

18 Q. At the Mewbourne location, if the lowest known
19 gas is minus 7160, they're only ten feet higher than that
20 point?

21 A. That would be correct.

22 Q. Is there a substantial risk that their location
23 is going to be wet in the Morrow?

24 A. With what you know from the highest known -- or
25 lowest known gas, yes, there would be.

1 Q. Before we talk about the details of the seismic
2 study, describe for us the conclusions and the
3 characterization of the fault that you have located between
4 the Fasken location and the Mewbourne location in the south
5 half of Section 1.

6 A. It's basically a fairly north-south-trending
7 fault, dying out north and south as represented on the map.
8 It has approximately 100 foot of throw at the Mewbourne
9 location. Faults completely through the Morrow section,
10 most likely clear up into the Strawn section, a formation
11 higher.

12 Q. When we look at the extension of that fault, as
13 you move south it follows the minus 71-foot contour line
14 [sic] for a certain distance?

15 A. That's correct.

16 Q. Describe the character of that fault as we move
17 south into the Texaco spacing unit.

18 A. It starts to die into the actual dip you see to
19 the south and loses throw and disappears completely.

20 Q. When we look at the north end of that fault, what
21 happens to cause it to terminate within the spacing unit
22 north of the Fasken location?

23 A. Again, it dies out gradually, but at a lot faster
24 rate than the southern end.

25 Q. Let's look at the other major fault to consider.

1 It's the one that runs in 11. It runs generally southwest
2 to northeast. Do you see that one?

3 A. Yes, I do.

4 Q. Describe and analyze the character of that fault
5 for us.

6 A. It's a very prominent fault in the very southwest
7 corner of the 3-D. I might add, the 3-D is the blue
8 outline on that map. I can see the fault strongly in the
9 southwest corner, and it gradually dies as it moves to the
10 northeast and ends almost at the intersection of the four-
11 section corner.

12 Q. Based upon your study of the seismic data, is
13 there any doubt or reservation, in your expert opinion, as
14 to the termination of that particular fault we're
15 discussing now?

16 A. No, there isn't.

17 Q. Can you conclude that the Fasken location and the
18 Texaco Levers 2 well are within the same structural area
19 that is not fault-separated?

20 A. I see no fault separation between Texaco and
21 Fasken's location.

22 Q. Let's go back and talk about the general
23 foundation of data. Describe for us the system that was
24 constructed in a general way.

25 I recognize that you're under a confidentiality

1 agreement with Matador. But recognizing that and without
2 violating that confidence, describe for us the quality of
3 the data and the reliability of the data and the general
4 method by which this 3-D seismic was developed.

5 A. It was acquired in late 1994 using state-of-the-
6 art equipment and techniques at that time. It was acquired
7 in a reliable manner by a reputable company. At that time,
8 the data was processed by another reputable data-processing
9 company, also the same company that acquired the data.

10 And I then analyzed that data after I received it
11 from the processor. Data quality for this area was quite
12 good. The events were picked using sonic logs converted to
13 synthetic so I could identify my events. Several
14 structural events were very easily identified and highly
15 correlable through the data set and were mapped.

16 Q. Are both the Cisco and the Morrow events
17 identifiable and structurally mappable?

18 A. Yes, they are.

19 Q. What then did you do?

20 A. I then interpreted the data set for those
21 horizons and created maps from those.

22 Q. Okay. When we investigate the Morrow structure
23 map as we're doing now on Exhibit 3, am I correct in
24 understanding that, as part of this analysis, that you have
25 not identified individual sand packages, if you will; that

1 was not the point of the study?

2 A. No attempt was made to do individual sand
3 packages. They're way too thin to see individual sand
4 packages on seismic. But that lower Morrow sand -- or
5 shale, is a very prominent interface, and it's very
6 mappable as a structural component.

7 Q. Have some other companies attempted to try to use
8 3-D seismic as a method to actually map the individual sand
9 packages?

10 A. It has been tried, yes.

11 Q. All right. That was not what you were doing
12 here?

13 A. No, I did not try that at all.

14 Q. Are you satisfied within a reasonable technical
15 certainty about the reliability of your ability to map the
16 faulting and the structure in the Morrow shale?

17 A. Yes, I am.

18 Q. When we look at the conclusions with regard to
19 that study, what do you find in terms of the Mewbourne
20 location in contrast to the Fasken location?

21 A. It is downthrown on a 100-foot fault to the east.

22 Q. One of the things that I believe scientists of
23 your discipline and profession do is to satisfy yourself
24 that you, in fact, are seeing faults, and that that is not
25 simply a velocity-induced fault that is simply created by

1 the process. I did not describe that very well, but --

2 A. I believe I understand your question.

3 Q. All right. The point is that you will analyze
4 and look to make sure your data is generating a reflection
5 of an actual fault, rather than having some change in
6 velocity give you a false fault reading?

7 A. That's correct, I am.

8 Q. All right.

9 A. I always check them all out to make sure they are
10 real events.

11 Q. Can you use both of these faults that you have
12 shown in the area we've just described and identify for the
13 Examiner why you're absolutely convinced that these are
14 faults positioned as they are and do not represent
15 velocity-induced faults?

16 A. There's a strong velocity contrast across the
17 area. It runs basically north to south, with it getting --
18 rocks getting faster to the north, pretty much an east-west
19 strike with a velocity gradient.

20 When we look at the fault in the southwest
21 corner, that trends southwest-northeast, it's a very
22 prominent fault in the seismic data, confirmed by
23 subsurface control. I therefore believe it since I've
24 confirmed by geology.

25 And then, since it runs on strike with velocity,

1 I look to see if it could be a velocity-induced feature.
2 With the rocks getting faster to the north and the throw of
3 the fault being upthrown to the south, there's no way it
4 could be a velocity-induced feature because the throws are
5 backwards. If it's going to be a velocity-induced feature,
6 it would pull it the other direction. So you would have to
7 thrown the fault different and then dishonor your
8 subsurface control. So in my mind that confirms that
9 fault.

10 Q. How about the other fault?

11 A. As for the north-south-trending fault, just by
12 the fact that it runs perpendicular to the velocity
13 gradient makes it fairly hard for that to be any kind of a
14 velocity-induced feature. If it was a velocity-induced
15 feature, you're having velocity gradually change across
16 that whole fault in a uniform manner. There's no way you
17 can have an abrupt change when you're running perpendicular
18 to a velocity gradient.

19 Q. Let me turn your attention to Exhibit 10 and have
20 you identify and describe for us Exhibit 10.

21 All right, sir, Mr. Lint. Identify and describe
22 Exhibit 10.

23 A. Exhibit 10 is simply a base map to show the
24 location of the data pertinent to this hearing and the
25 location of the relevant wells. The small dots actually

1 show every tenth dencenter on my 3-D data set.

2 Q. You're satisfied that the density of the data
3 points is appropriate for examination of the features that
4 you're studying?

5 A. That is correct. Those are every tenth data
6 point. I have a data point at every 110-foot interval.

7 Q. Let's turn to the map that's prepared by you for
8 this analysis and look at -- Let's look at Exhibit 11.
9 First of all, identify for us what we're looking at, and
10 then we'll begin to describe the conclusions you can reach
11 from the display.

12 A. This was a map constructed on the top of the
13 Cisco reflector. This is a time structure map. Data was
14 measured exactly from the data set posted and contoured.

15 Q. What we're looking at here is the analysis of the
16 Cisco opportunity at the Fasken location, in contrast to
17 the Mewbourne location?

18 A. That's correct.

19 Q. Okay. Describe for us the significance of the
20 color code.

21 A. The red colors represent the high-time areas, the
22 greens gradually lower, and the blues is the lowest
23 position on the map.

24 Q. What does that mean to you in looking at the
25 structure map, then?

1 A. The high area is off to the northwest with an
2 isolated high structure at the Fasken location. The
3 Mewbourne location is on the downward slope, significantly
4 downslope on the Cisco reef.

5 Q. Let's turn to Exhibit 12 and have you identify
6 and describe this display.

7 A. This is another representation to show the same
8 effect. I was able to map the third Bone Springs sand in
9 the area. It's also a good seismic event. It's a common
10 practice to isochron from a shallower horizon, down to the
11 objective. Thinning in that would lead you to the
12 conclusion that you have structures.

13 This is a map that shows an isochron time
14 interval between that Bone Spring marker and the Cisco. It
15 shows, again, the same thing, a thinning in the northwest
16 corner where the red colors represent thin seismic times,
17 sloping off quickly to the southeast.

18 Q. What does this information allow you to conclude?

19 A. That that is indeed a Cisco structure, high
20 likelihood of a seismic Cisco structure.

21 Q. At the Fasken location?

22 A. At the Fasken location.

23 Q. And we do not have that feature or event
24 occurring at the Mewbourne location?

25 A. No, we don't.

1 Q. Let's turn to Exhibit Number 13 and have you
2 identify and describe that display.

3 A. This is a map constructed between the Cisco
4 reflector and the Morrow shale, which the top of lower
5 Morrow map was constructed from. This was an attempt to
6 identify thickening within the Cisco.

7 Again, the blue colors and purple colors identify
8 thick isochron times between the Cisco, and the yellows
9 represent thin areas of the Cisco to Morrow. It shows the
10 Fasken location to be located on a thick area and the
11 Mewbourne location to be in a much thinner area, therefore
12 again reinforcing that we are probably in a Cisco reef
13 position.

14 Q. For me as a layman, I'd like to have you explain
15 the general strategy here you're utilizing to try to find
16 this Cisco feature, what it is, what's it supposed to look
17 like and how do we achieve success at producing
18 hydrocarbons out of that Cisco?

19 A. It's a very subtle feature. I look for some kind
20 of time structure on the top. I look for some thinning
21 between the Bone Springs marker and that Cisco to confirm
22 that, and I also look for this thickening to prove that we
23 are in a Cisco reef position.

24 Q. Have you also analyzed and come to conclusions
25 about the potential effect, if any, that the well -- the

1 old well in Section 2 to the west, which was a Cisco well
2 at the time -- Mr. Bruce mentioned the fact that it had
3 been used for saltwater disposal -- have you examined those
4 facts and circumstances?

5 A. Yes, I have. It appears we'll be about 25 feet
6 high to that Continental 2 Levers well at the Fasken
7 location. I also know that they put 6 million barrels of
8 oil into that well [*sic*], they also took 15 million barrels
9 out of Springs field, which is updip from there also.

10 Q. Water?

11 A. Water, excuse me.

12 Q. While this was going on a while ago, you hand-
13 drew an illustration, I think, that illustrates this
14 example. Let me -- We've copied it, and I'll distribute it
15 and we'll talk about it.

16 All right, let's look at the top drawing, if you
17 will. It's got a mound to the left. What does that
18 represent?

19 A. That would be the possible Fasken location.

20 Q. All right. And then at that point, in the top
21 portion of that structural high, you have estimated a
22 trapping mechanism to contain gas hydrocarbons?

23 A. That's correct.

24 Q. And then you've projected the Fasken well --

25 A. That's correct.

1 Q. -- just for illustration?

2 As you move to the right of that display, what's
3 the purpose of the next vertical line that intersects the
4 lower portion of that structural line?

5 A. That would represent the Continental 2 Levers
6 well to the west that the water is injected in.

7 Q. What's the point?

8 A. I was showing that the 6 million barrels of water
9 had been injected into that reservoir at that point,
10 downdip to the Fasken location.

11 Q. Would that water injection downdip in the Cisco
12 structural feature have an adverse effect on the Cisco
13 hydrocarbons that are trapped in the feature you show at
14 the Fasken location?

15 A. Not in my opinion. That's a strong water drive
16 reservoir. You've taken 15 million barrels out of the
17 Springs. There's a net deficit of 9 million barrels of
18 water -- Excuse me, I keep saying oil; it's water. I don't
19 like to talk about water.

20 With that being a strong water drive reservoir, I
21 really doubt if you can flush those structures out. I'm
22 not an engineering expert; that's just my opinion.

23 Q. Is this Cisco structural feature the only closure
24 in the Cisco that you see within the entire proposed
25 spacing unit?

1 A. I think I'd be treading a little bit on some of
2 the confidentiality.

3 Q. All right.

4 A. There is one small one associated with the
5 Continental 2 Levers.

6 Q. No, I meant within -- within this particular area
7 of dispute between Mewbourne and Fasken.

8 A. No, no.

9 Q. All right. And the magnitude of differential in
10 structure between the Mewbourne location and the Fasken
11 location on the feature is approximately what, sir?

12 A. It's quite a bit. Excuse me, I'll have to look
13 that one up. It will be approximately 250 to 300 feet.

14 Q. In addition, at my request, I have asked you to
15 prepare and bring with you certain -- taking the data set,
16 you can construct, if you will, a connection of the data to
17 illustrate the various faulting features in the Morrow
18 reservoirs, can you not?

19 A. That's correct.

20 Q. And at my request you have prepared certain of
21 those lines to illustrate the faulting that's occurring in
22 the Morrow?

23 A. That's correct.

24 Q. Let's turn to the first of those displays. I
25 think it was Exhibit Number 14?

1 A. I believe those will need to be distributed.

2 Q. All right, Mr. Lint, let's start with Exhibit
3 Number 14. Before you reach the interpretation, tell us
4 how to understand the data illustrated.

5 A. This is a -- it appears as a 2-D line. This is
6 one segment of a line through the 3-D data set. It gives
7 the appearance of a 2-D line. This is a straight east-west
8 line. It runs exactly east-west through the Mewbourne
9 proposed location. It would be proposed location on our
10 identification plat that I gave you. I guess it was
11 Exhibit 10.

12 This is actually line 70, which is even annotated
13 on that.

14 Q. What would you call this type of display?

15 A. This would be called -- This would be an in-line
16 display from the 3-D data set.

17 Q. What is our point of view in the reservoir?

18 A. Like I say, this one goes east-west directly
19 through the Mewbourne location.

20 Q. The Mewbourne location is projected by the red
21 line?

22 A. That is right, it intersects this line exactly at
23 that point.

24 Q. At the bottom portion of the display, just to the
25 left of the Mewbourne-projected location, there's another

1 vertical red line. What does that represent?

2 A. That's the fault we're talking about that runs
3 north-south between the Fasken and Mewbourne locations,
4 where it intersects this line.

5 Q. As we start at the top, moving down, you have
6 colored an interval and identified it as the third Bone
7 Springs?

8 A. That is correct.

9 Q. Describe for us what you're seeing in that
10 interval of the display.

11 A. Relatively normal southeast dip, east-to-
12 southeast dip.

13 Q. We move down into the Cisco, which is the blue-
14 shaded interval, and what do you see and conclude?

15 A. You see a very rapid climb to the Cisco reef edge
16 as you go to the west, and then you see some structural
17 closure in an east-west direction on this particular line.

18 Q. And then you move down into the Morrow
19 reservoirs, and what do you see and conclude?

20 A. For one thing, you can map the thing that is
21 called top of the lower Morrow. It is actually that
22 interface between that middle Morrow shale and the top of
23 the lower Morrow. That's the structural marker we mapped,
24 and the map number Exhibit 3 was created from.

25 It shows the presence of a very strong fault

1 slightly west of the Mewbourne location. It shows also
2 that the fault breaks entirely through the Morrow, and it
3 also shows that the thickening of that entire yellow-
4 orange-colored section, which is the lower Morrow, has no
5 change in thickness from one side to the other, therefore
6 saying post-Morrow faulting.

7 Q. Okay. You can use this type of information and
8 the rest of your data set, then, to construct Exhibit
9 Number 3, which shows us the rest of how this fault is
10 oriented and positioned on this structure?

11 A. That is correct. I have approximately 160 of
12 these similar displays. Each one was interpreted one at a
13 time, and this map was created from it.

14 Q. Your conclusion, sir, about this issue?

15 A. The Mewbourne is on the downthrown side of a
16 fault at the Morrow level.

17 Q. Let's turn to Exhibit 14 and have you identify
18 and describe this display. I'm sorry, that was 14 --

19 A. Yes.

20 Q. -- we're doing 15.

21 A. Yeah, 15. 15 is a north-south line taken from
22 the data set, as opposed to the east-west we just looked
23 at. It runs exactly north-south through the Fasken
24 proposed location, location number 2. The red line
25 represents where that wellbore would intersect that seismic

1 line.

2 Q. Starting with the third Bone Springs, give us
3 your conclusions and interpretations as we move down
4 through the reservoirs.

5 A. Same thing at the third Bone Spring as the
6 previous line, south -- This shows the south dip component
7 of that.

8 The Cisco, this more dramatically shows how
9 quickly the reef drops to the south, and it shows the
10 north-south rollover component that we're talking about
11 there.

12 It also shows that at the top of the lower
13 Morrow, the yellow event, this line would run directly
14 north-south through the Fasken location, would run slightly
15 west of the Texaco locations. If the fault that crosses
16 southwest-to-northeast through Section 11 was present, it
17 should intersect this line. It does not.

18 Q. You can conclude, then, what, sir, with regards
19 to the fault in Section 11 as it approaches the south half
20 of 1?

21 A. It is gone before it reaches this particular
22 line.

23 Q. Come back up to the Cisco.

24 A. Okay.

25 Q. Can you use this illustration to identify the

1 Cisco feature that you're proposing be accessed at the
2 Fasken well location?

3 A. I can. The north-south rollover you see on that
4 blue reflector is the north-south component of the small
5 structural feature we'd like to hit with the Fasken
6 location.

7 Q. When we look at the top of the lower Morrow and
8 continue through that interval, you see no faulting or
9 separation as we look in this dimension of the reservoir?

10 A. No, not in the area of question.

11 Q. Your conclusions, then?

12 A. There is no fault separating the Texaco
13 production from the Fasken location at the Morrow level.
14 There is north-south and east-west closure on the Cisco at
15 the Fasken location. The Mewbourne location is downthrown
16 on that small fault and significantly down Cisco slope.

17 MR. KELLAHIN: Mr. Examiner, that concludes my
18 examination of Mr. Lint.

19 We move the introduction of his Exhibits 10
20 through 17.

21 EXAMINER STOGNER: Any objections?

22 MR. CARR: No objection.

23 MR. KELLAHIN: I'm sorry, Mr. Examiner, I've
24 forgotten one, if I might --

25 EXAMINER STOGNER: I thought you did.

1 MR. KELLAHIN: I stopped one short. Let's finish
2 this off, then, please, with your permission.

3 EXAMINER STOGNER: Sure.

4 Q. (By Mr. Kellahin) Number 16, then, Mr. Lint, I
5 apologize.

6 A. This is a line that runs directly east-west
7 through the Fasken-proposed location. Primary function,
8 again, is to illustrate the east-west rollover component of
9 the Cisco reflector at that location.

10 Q. So now we've seen the Cisco in both directions,
11 if you will?

12 A. Yes, these two lines intersect directly at the
13 Fasken proposed location, show you the north-south, east-
14 west closure.

15 Q. On the bottom portion of the display, there's a
16 red line vertically oriented. What is the meaning of that?

17 A. There is some faulting down in the Devonian and
18 Mississippian. This shows that some of that faulting is
19 pre-Morrow and doesn't affect the -- actually structurally
20 break the Morrow reflector.

21 Q. And this exhibit is included in part of the
22 conclusions you just gave the Examiner?

23 A. Yes, it is.

24 MR. KELLAHIN: Mr. Examiner, with that supplement
25 we move the introduction of Mr. Lint's Exhibits 10 through

1 17.

2 EXAMINER STOGNER: Exhibits 10 through 17 will be
3 admitted into evidence.

4 Thank you, Mr. Kellahin.

5 Mr. Bruce?

6 CROSS-EXAMINATION

7 BY MR. BRUCE:

8 Q. Mr. Lint, let's start with the Cisco/Canyon
9 first. What is the approximate size and location of this
10 survey?

11 A. It was 7.1 square miles for the total size of the
12 survey.

13 Q. Okay. Looking at the south one third of Section
14 1, where is that located with respect to the -- you know,
15 is it on the edge, is it in the middle?

16 A. It's fairly well in the middle, pushing to the
17 east side. I believe that's illustrated with a blue
18 outline on your Exhibit Number 3, show you the exact
19 relation to the acreage in question.

20 Q. Okay. I didn't understand that from Mr. Harmon.
21 How much variation in the -- How much does the
22 Cisco thickness vary, say, from the south half of Section 2
23 to the north half of Section 12?

24 A. I've only measured that in a time manner. I'm
25 showing approximately 42 milliseconds of thickening across

1 that map.

2 Q. So you're not sure of the thickness?

3 A. I could calculate it if it was needed.

4 Q. Now, this was originally shot for Matador?

5 A. That's correct.

6 Q. When was that?

7 A. In late 1994.

8 Q. Okay. Matador owned interests in this area back
9 then?

10 A. That is correct.

11 Q. Why didn't Matador pursue this prospect?

12 A. We pursued it purely as a Cisco prospect. The
13 closure that was identified on the acreage that Matador had
14 access to was too small to accept the risk for drilling a
15 pure Cisco location for a 50-foot closure.

16 Q. Do you agree with Mr. Harmon that this is still
17 too risky just to drill for a Cisco?

18 A. Definitely.

19 Q. Okay.

20 A. Fifty feet is a pretty subtle structure.

21 Q. Is it also subtle for faulting?

22 A. Since most of the faults I've identified here are
23 100 foot or more, I did not address that question.

24 Q. What -- I mean, what is the dividing line? You
25 say 100 feet. Is it 75 feet and not 50 feet?

1 A. Resolution on the seismic data I have here is
2 probably about 70 feet, 60 to 90 feet.

3 Q. So you're right on the edge?

4 A. Not really. That edge comes very fast, very
5 abruptly, you go over it quickly.

6 Q. Could the Fasken location in Section 1 be
7 completely wet in the Cisco?

8 A. Very possible. There could not be a structure
9 there.

10 Q. Okay. Were you involved -- You know, I asked Mr.
11 Harmon a question about another Matador Cisco/Canyon well
12 to the north or northeast. Were you involved in that well?

13 A. Yes, I was.

14 Q. I believe it was in what? Section 19, 20 South,
15 27 East?

16 A. That's correct.

17 Q. Was that test successful?

18 A. No, it wasn't.

19 Q. What went wrong with the well or with the
20 interpretation there?

21 A. I believe it's probably not common company
22 practice to release the techniques that were used in the
23 analysis of that particular area. It's proprietary data.
24 How it was arrived at is proprietary information.

25 Q. Are you using similar techniques here?

1 A. I could go say yes, I use similar techniques.

2 Q. Have you previously prospected for the Morrow
3 using 3-D seismic?

4 A. Yes, I have.

5 Q. What are the res- -- any -- In this area?

6 A. Not in this immediate vicinity, no.

7 Q. Just a couple of last questions on the Cisco. Do
8 you have Mr. Harmon's production map? I believe it's
9 Exhibit 1.

10 A. Yes, I do.

11 Q. I've circled it on my map, but kind of around
12 Section 34, that's the Cisco/Canyon Pool?

13 A. That's that Springs field.

14 Q. Okay, and you're hoping to find something similar
15 over to the southeast?

16 A. I don't think you'll find anything that large.
17 That's quite a large one. This one covers approximately
18 700 acres. I think we're looking at something that may be
19 in the range of 100 to 120 acres.

20 I prefer to use another analogy, McKittrick
21 Hills, a field six miles south of us, again another
22 prolific Cisco field, 50 feet of closure, over 200 acres,
23 made 15 BCF of gas, illustrates the lucrativeness of a
24 Cisco location.

25 Q. Were either of those found on 3-D?

1 A. Not to my knowledge. I don't think 3-D had been
2 invented yet.

3 Q. Can you determine porosity, permeability and
4 fluid components with 3-D seismic?

5 A. Which play are we talking about?

6 Q. This one.

7 A. It has been done in places, not by myself.

8 Q. Let's move on and discuss the Morrow, and maybe
9 take Mr. Harmon's Exhibit 3, which is the general faulting
10 map. I just have a few questions there, but...

11 Now, yesterday, Mr. Williams testified about a
12 gas-water contact at about minus 7260 or thereabouts.
13 Looking at this -- Section 6 to the east is wet, would you
14 agree, in the Morrow? Or at least in parts of the Morrow?

15 A. As I've been informed, yes.

16 Q. Okay. Now, the Fasken well in the east half of
17 Section 1 at minus 7219, that was not wet, was it?

18 A. To the best of my knowledge.

19 Q. Okay. Now, the Mewbourne proposed location is
20 updip from the Fasken location, is it not?

21 A. Excuse me?

22 Q. The Mewbourne proposed location is structurally
23 higher than that existing Fasken well?

24 A. Oh, the existing Fasken well, yes.

25 Q. So it should --

1 A. I would say it's probably 50 feet high to that
2 well.

3 Q. So it should not be wet, would you agree?

4 A. Provided that well is, yes, not wet.

5 Q. Provided -- ? I didn't hear your answer, I'm
6 sorry.

7 A. I said provided, yes, there's no water in that
8 well, yes, that you would be -- there should be no water in
9 the Mewbourne location in that same sand.

10 Q. Have you studied the gas-water contact anywhere
11 in this pool?

12 A. Only that I know the lowest known gas is at a
13 minus 7160.

14 Q. Well, but --

15 A. And I gathered that information yesterday from
16 Mr. Williams.

17 Q. I believe he said 7260, Mr. Lint.

18 A. I believe he said that the gas-water was
19 somewhere between 7180 and 7263 in the brown sand, and then
20 he said the lowest known gas was at a minus 7160.

21 Q. Now, there are multiple Morrow zones, are there
22 not?

23 A. That is correct.

24 Q. Now, this fault -- I mean, just because there's a
25 fault -- you show this fault between -- I've been calling

1 it this S-shaped fault between -- running from Section 1
2 south to Section 12. Just because of this faulting doesn't
3 mean the Morrow is not productive on the downthrown side of
4 that fault, does it?

5 A. No, it doesn't.

6 Q. And as a matter of fact, if Mewbourne is on the
7 other side of that, that would prevent any drainage between
8 the Texaco and -- or competing production between the
9 Texaco and Mewbourne locations; is that correct?

10 A. I believe you're out of my expertise. I'm not an
11 engineer.

12 Q. Okay. Now, a look on the southern side of this
13 production map, there's a well in the south -- extreme
14 southwest corner of Section 18.

15 A. Okay.

16 Q. Now, there's a well in the -- it's marked -- just
17 looking at the marks, minus 7239. There's a well in the
18 northwest quarter of Section 19 that produced quite a large
19 volume of gas in the Morrow. Are you aware that those two
20 wells are separated by faulting?

21 A. I have not studied that particular portion of the
22 map, no.

23 Q. Give me one minute, Mr. Examiner.

24 One final question. Is it possible -- this goes
25 back to the Cisco/Canyon -- that the Fasken Cisco prospect

1 is a shelf-edge velocity problem?

2 A. When you're dealing with 50-foot subtle
3 structures, it's always a possibility. It's been my
4 observation that every proven structural field out here has
5 a time structure on top of it, but not necessarily every
6 time structure has a subsurface structure associated with
7 it.

8 But I do know that if you do not locate there,
9 you will not hit that even possibility.

10 MR. BRUCE: That's all I have, Mr. Examiner.

11 EXAMINER STOGNER: Thank you, Mr. Bruce.

12 Mr. Carr?

13 MR. CARR: I have no questions.

14 EXAMINER STOGNER: Mr. Kellahin, redirect?

15 MR. KELLAHIN: No questions, Mr. Examiner.

16 EXAMINATION

17 BY EXAMINER STOGNER:

18 Q. In looking at Exhibit Number 15 -- that's your
19 north-south plat or line -- and when I look at the lower
20 left-hand corner, are those faults that I'm seeing?

21 A. Those are faults that break the Mississippian but
22 do not break the top of the lower Morrow.

23 Q. In what way -- Or do they affect the Morrow any
24 at all? Not -- They didn't break through. Did they affect
25 it some way with the deposition of the Morrow?

1 A. I would think they would. That would be sound
2 geological reasoning, and you see some isochron thickening
3 on the downthrown sides of those faults.

4 Q. Okay. On Exhibit Number 14, now, if I look in
5 the lower right-hand corner to the east, now, that's a
6 fault, and you show it to extend into the lower Morrow.
7 Does that correspond, if I look on Exhibit Number 3, to
8 that fault to the far right of your 3-D outline?

9 A. No, that would be a different fault.

10 Q. That would be -- Okay. Is that a fault or -- How
11 come it's not on the map?

12 A. You're pushing the edge of the limits of the data
13 there. About a -- I'd say a quarter, an eighth-of-a-mile
14 strip on the outside edge of the data is not reliable
15 data --

16 Q. Okay.

17 A. -- due to the processing techniques. The upsweep
18 nature you see of the reflectors on the edge is induced by
19 the fact that is the end of a survey, and it's not real.

20 So that red line, essentially, on Exhibit 14, the
21 farthest fault I've got marked would really be the end of
22 the usable data.

23 Q. Okay. Now, if I go the other way, back to the
24 west --

25 A. Okay.

1 Q. -- does that fault that you show that comes in
2 out of the southwest and extends toward the -- I guess more
3 like the west-southwest and heads up there in the east-
4 northeastern direction and then it ends just right into
5 Section 1, that's a terminal point that doesn't show up on
6 Exhibit Number 14?

7 A. No, that is another supporting factor, that that
8 fault does not continue across Section 1.

9 Q. Okay.

10 A. If it did, it would show up on this line.

11 Q. Would you have indications because of -- You
12 definitely had indications, then, of that fault as it
13 extended to the southern part of your 3-D outline?

14 A. That's correct.

15 Q. Okay. On such a technique, are you able to
16 determine what the vertical extent of those faults are, of
17 the offset?

18 A. Within reason, yes, I can.

19 Q. And what -- When I look at the so-called S-shaped
20 fault that we're describing here between the proposed
21 Mewbourne well and the Texaco well, what is the maximum
22 extent, or where along that S does that extend and what
23 would it be?

24 A. I think it's about right where the Mewbourne
25 location is. You can see a small structural high on the

1 upthrown side, and that calculates to be a little over 100
2 feet of throw.

3 EXAMINER STOGNER: Any other questions of this
4 witness?

5 MR. KELLAHIN: No, sir.

6 EXAMINER STOGNER: You may be excused.

7 Gentlemen, I have 11:40.

8 MR. KELLAHIN: I have two procedural things to
9 submit.

10 I have waivers of objection and my notice
11 certificates.

12 EXAMINER STOGNER: Okay.

13 MR. KELLAHIN: Exhibit 18 is a waiver of
14 objection to the Fasken location by Penwell, and attached
15 to that is a waiver of objection by Texaco to the Fasken
16 location.

17 And then Exhibit Number 19 is my certificate of
18 notice to all the proper parties.

19 Mr. Examiner, I'd move the introduction of
20 Exhibits 18 and 19.

21 EXAMINER STOGNER: Exhibits 18 and 19 will be
22 admitted into evidence.

23 MR. KELLAHIN: That concludes our presentation.

24 EXAMINER STOGNER: Mr. Carr, Mr. Bruce, Mr.
25 Kellahin?

1 (Off the record)

2 EXAMINER STOGNER: Let's take a lunch and
3 reconvene here at -- let's make it straight up, one
4 o'clock.

5 (Thereupon, a recess was taken at 11:40 a.m.)

6 (The following proceedings had at 1:04 p.m.)

7 EXAMINER STOGNER: This hearing will come to
8 order. We're considering consolidated Cases 11,723 and --
9 whatever the other one was, 11,755.

10 Mr. Carr?

11 MR. CARR: At this time, Mr. Stogner, we would
12 call David Uhl.

13 DAVID A. UHL,

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

16 DIRECT EXAMINATION

17 BY MR. CARR:

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

19 A. David A. Uhl.

20 Q. Where do you reside?

21 A. In Denver, Colorado.

22 Q. By whom are you employed?

23 A. Texaco.

24 Q. Mr. Uhl, what is your current position with

25 Texaco?

1 A. I'm a geologist working southeast New Mexico.

2 Q. Have you previously testified before this
3 Division?

4 A. No.

5 Q. Could you briefly summarize your educational
6 background for Mr. Stogner?

7 A. Bachelor's degree from the University of Nebraska
8 in 1979 and a master's degree from the same school in 1981,
9 in geology.

10 Q. And since your graduation in 1981, by whom have
11 you been employed?

12 A. Texaco, the full time.

13 Q. And during that entire period of time have you
14 worked as a geologist?

15 A. The entire time.

16 Q. Are you familiar with the Applications filed in
17 each of these cases?

18 A. Yes.

19 Q. What is Texaco's interest in this case?

20 A. Well, as to the Mewbourne location, we're the
21 affected party to the south of the Mewbourne location in
22 Section 12. We have two wells in the section, and we're
23 concerned that a Mewbourne at their location 660 from the
24 lease line would adversely drain our section.

25 Q. Have you made a geological study of the area

1 which is involved in these consolidated cases?

2 A. Yes.

3 Q. Are you prepared to share the results of that
4 study with Mr. Stogner?

5 A. With these exhibits, yes.

6 MR. CARR: Mr. Stogner, we tender Mr. Uhl as an
7 expert witness in petroleum geology.

8 EXAMINER STOGNER: Any objections? Mr. Uhl is so
9 qualified.

10 Q. (By Mr. Carr) Would you briefly state what
11 Texaco seeks with this Application?

12 A. Well, basically what we're trying to do is that
13 we feel as if we drilled a well there abiding by the field
14 rules; we expect the offset operators to -- we expect the
15 offset operator, anyone who is affecting us, to abide by
16 the same field rules, the field rules being 640-acre
17 spacing, 1660 from a lease line and --

18 Q. And what is the spacing? 640 acres?

19 A. 640-acre spacing, that's correct.

20 Q. Are you going to be requesting that a penalty be
21 imposed on the Mewbourne location?

22 A. Yes, we do.

23 Q. And you're familiar with the rules for the
24 Catclaw Draw pool?

25 A. Right.

1 Q. And you've just reviewed those?

2 A. Yeah, 640-acre spacing, 1660-foot setbacks.

3 Q. Is this a prorated pool?

4 A. It was at one time, but since 1995 it hasn't been
5 prorated.

6 Q. Have you prepared exhibits for presentation in
7 the case?

8 A. Yeah, I've got two isopachs, a geologic structure
9 map and a cross-section going through the area.

10 Q. Let's go to the first isopach map, the isopach on
11 the B1 sand, Texaco Exhibit Number 1.

12 A. Yeah, that's what we're calling the B sand, or
13 the B1 sand in there. It might be convenient for you,
14 since we're using a different terminology, to compare that
15 to the accompanying cross-section for reference.

16 Q. And that is Exhibit Number 4?

17 A. Yeah, that's Exhibit Number 4. Yeah, maybe I
18 should just outline the cross-section real briefly.

19 If you look on any one of the geologic maps,
20 there's a line of the cross-section going there from A to
21 A'. We have the David Fasken Number 1 well on the right,
22 Mewbourne's proposed location, then, in the lines, our
23 Texaco Levers Number 2 well, that then goes into Section
24 14, the Hallwood Catclaw Draw Unit Number 17, and then it
25 ends at a dry hole over on the left, the Hanagan Petroleum

1 well.

2 The first map I have is on the B zone. That's
3 the zone that we are producing out of right now, in the
4 Levers Number 2.

5 We perforated two different zones in the Levers
6 Number 2, as you can see on the cross-section. We
7 perforated our C sand and also a B sand. And that B1 zone,
8 the top set of perforations is what I have mapped.

9 On the map I have outlined every well that has
10 penetrated and produced from the Morrow in this general
11 area. I've also outlined the net feet of porosity greater
12 than 8 percent. That's what the map is contoured on. And
13 basically it's showing that in our well we have 18 feet of
14 porosity greater than 8 percent.

15 As you move -- There's basically a north-to-south
16 trend going on in this area. This map probably differs a
17 little bit from the previous -- from other people's
18 interpretations. I mean, all geologists are going to
19 differ a little bit.

20 But I basically have a north-south trend going
21 on, which is consistent with the Morrow in this area.

22 Q. You have 18 feet in the Levers Number 1 well,
23 Section 12?

24 A. That's correct.

25 Q. Approximately how many feet do you show for the

1 proposed location that Mewbourne desires to drill in
2 Section 1?

3 A. Based on the Fasken well up there in Section 1,
4 and taking the contours around, I have that they will
5 encounter 10 feet or greater porosity. On the map I have
6 about 11 feet.

7 Q. You would agree with Mr. Montgomery that as you
8 move to the north the quality of the reservoir
9 deteriorates, would you not?

10 A. As you move to the north-northeast it does,
11 that's correct.

12 Q. If we move from their proposed location toward
13 the Texaco location, is it fair to say the quality of the
14 reservoir is going to improve?

15 A. Well, we are producing about 4 million a day. I
16 would say that it does improve quite a bit.

17 Q. Because of the change in the quality of the
18 reservoir, would you anticipate a well at the proposed
19 location to drain predominantly from the south?

20 A. Predominantly, that's correct.

21 Q. You have a standard spacing unit in Section 12,
22 do you not?

23 A. We do.

24 Q. And it's fully developed with two wells?

25 A. The two wells. We drilled our original well, the

1 Levers Number 1, and then we drilled the optional infill
2 well, the Levers Number 2.

3 Q. And the unit, proration unit, north of you is a
4 nonstandard unit; is that right?

5 A. That's correct.

6 Q. On whom is the proposed Mewbourne well location
7 encroaching?

8 A. It's encroaching on us, and only us.

9 Q. Let's go to Exhibit Number 2. Will you identify
10 that, please?

11 A. That's the map on the C1 sand. Again, now, you
12 have to look back at the cross-section. That is the top
13 sand in what some people call the lower Morrow in this
14 area. I'm calling it my sequence C. But that's a C1 -- C2
15 sand, I had that mixed up. This is a C2 sand.

16 Some of the other maps that have been presented
17 are calling for two sands in our well. We don't have two
18 sands in the well. We only have one sand in that lower
19 Morrow. That's a minor point, but it should be taken.

20 Q. This map is definitely a fluvial sand. We know
21 that from the samples, I know that from sidewalls that I
22 took in that well. It's a coarse-grained sand. It has a
23 dominant northwest-southeast pattern to it. It has
24 produced in our Number 1 well for quite a period of time.

25 When we drilled the Number 2 well to the north,

1 we ran a drill stem test over that interval and we came up
2 with a flow of about 2 million cubic feet of gas per day at
3 750 pounds flowing tubing pressure. But we know from the
4 shut-in pressure on that, that we only had about 1300
5 pounds shut-in pressure. Or, excuse me, 1350 pounds from
6 the drill stem test.

7 So we know that the Number 1 well, our Number 1
8 well in the south, has affected the pressure of that
9 reservoir in the Number 2.

10 So that sand is a fairly good -- It's a fairly
11 prolific sand, and it seems like the drainage exists over
12 quite a large area.

13 Q. You've mapped the B sand and the C sand. Based
14 on your knowledge of the A sand, does it demonstrate
15 similar characteristics to those shown on the --

16 A. The A sand is also a fluvial sand. Again, I know
17 that from sidewalls that we took on our well and the
18 coarse-grained nature. And it also has a dominant
19 northwest-southeast pattern to it.

20 But we don't have that open in our well right
21 now, the reason being is that we had enough rate
22 established in the bottom two sands for right now, to where
23 we essentially were meeting most of our pipeline capacity.

24 Q. Let's go now to Exhibit Number 3, the structure
25 map. Will you review that for Mr. Stogner?

1 A. Yeah, that's a structure map on the top of the
2 Morrow sand sequence. That would be the top of the
3 sequence A up there. That differs from the other structure
4 maps that have been presented, because most of the other
5 maps have been on the top of the lower Morrow, which would
6 be the same as the top of my sequence C in here.

7 That's basically show- -- from the well control,
8 where I do have the well control and basement geology. I
9 mean, I can't change it a whole lot. Of course, if we had
10 seismic we might be able to add a few little refinements
11 here and there.

12 We've got a major fault off to the west, and
13 that's demonstrated by the well control heading north-
14 south.

15 I noticed on Mr. Williams' map that he has a
16 fault running between the Continental well and our Levers
17 Number 2 well. You're essentially running down where the
18 four sections intersect. Basement geology, you can put
19 that in or you can take that out. I like to take that out.

20 Q. Would you agree with the testimony presented in
21 this case by Mewbourne that the quality of your well
22 improves, the thicker the section in which you complete.

23 A. Quality of the well improves in the thicker
24 section that we complete, and the more updip, with the
25 better chance we have of getting reserves in that well.

1 Q. Is it fair to say that the proposed location is
2 in a center section and downdip from the Texaco well in 12?

3 A. It appears to be. There's some thinner section
4 in just about all the reservoirs that I have mapped. And
5 it's also downdip from our location.

6 Q. Now, you previously referenced Texaco Exhibit
7 Number 4, the cross-section?

8 A. Right.

9 Q. Do you have any additional testimony you'd like
10 to present with that exhibit?

11 A. Yeah -- The main thing I was trying to portray
12 with the cross-section is that our principal reservoir
13 sands in there, the A sand, the B1 sand and the C2 sand,
14 are relatively continuous as you go from the Fasken well to
15 the right, through the Mewbourne location to the Texaco
16 well.

17 The B sand continues on further to the west. The
18 C sand tends to pinch out a little bit as you go past our
19 location. But between those two wells, and including the
20 Fasken location, we should be encountering the same
21 reservoirs.

22 Q. Let me hand you what has been marked as Mewbourne
23 -- Texaco Exhibit 6. Could you identify this, please, tell
24 us what it is?

25 A. Yeah, that's a spreadsheet that I made of wells

1 that were just immediately adjacent to our section,
2 including the Fasken well, the Continental well and a few
3 wells to the south of us.

4 The main thing I was trying to portray on this
5 was what zones they had been completed in, when they were
6 completed, the timing of them, what type of initial rate
7 these wells had, and how that initial rate compared to the
8 AOF, the absolute open flow.

9 The main thing being, is that if we recommended a
10 penalty on the Mewbourne location, how significant would
11 that penalty have to be?

12 What I see in here is that if you look on the two
13 columns on the right, the first year's average rate versus
14 the percentage of the AOF, we're dealing -- and we're
15 between 9 percent, 45 percent, that first year's average
16 rate, daily production rate, versus the absolute open flow
17 of that well.

18 Q. It ranges from a low of 7 percent to a high of
19 52 --

20 A. Excuse me, 7 percent to a high of 52 percent.

21 Q. And what is the source of the data displayed on
22 this exhibit?

23 A. It's all state records.

24 Q. Mr. Uhl, will Texaco call an engineering witness
25 to review the recommended penalty in this case?

1 A. Yeah, we're going to call Kevin Bittel.

2 Q. Were Exhibits 1 through 4 and 6 prepared by you?

3 A. Yes.

4 MR. CARR: At this time, Mr. Stogner, we would
5 move the admission into evidence of Texaco Exhibits 1
6 through 4 and 6.

7 EXAMINER STOGNER: Any objection?

8 Exhibits 1 through 4 and Exhibit Number 6 will be
9 admitted into evidence at this time.

10 MR. CARR: And that concludes my direct
11 examination of this witness.

12 EXAMINER STOGNER: Thank you, Mr. Carr.

13 Mr. Bruce?

14 EXAMINATION

15 BY MR. BRUCE:

16 Q. Mr. Uhl, could Texaco have drilled its Levers
17 Number 2 closer to the -- or further to the north than it
18 did?

19 A. No, we couldn't, and the main reason being, if
20 you look on one of the maps here, there's a little squiggly
21 line going through Lot Number 2, the south half of Lot
22 Number 3 and through Lot Number 5. That's a draw that's
23 going through the area. We're restricted by the BLM from
24 going to the north.

25 We originally planned on going 1650 from the

1 north, 1650 from the west, but because of service
2 considerations and because of the BLM, we were forced to
3 move to the south.

4 Q. Okay. Could you have sidetracked the well and
5 gone --

6 A. Yes, but --

7 Q. -- directionally drilled --

8 A. Yes, but it would have cost extra money.

9 Q. Okay. Now --

10 A. You can see that blue line going through there,
11 for your reference.

12 Q. Yeah, how wide is the draw? I see the line.

13 A. That draw is fairly wide going in through there.
14 It's -- again, we had to move our location almost 900 feet
15 to the south because of that draw, to be in compliance with
16 the -- And you know the BLM.

17 Q. Could you have drilled not just further north,
18 but could you have drilled further to the east and then the
19 north?

20 A. If you drill to the east and north, you can see
21 over there -- And in order to comply with the 1650-foot
22 setback, you're basically going south of those -- one, two,
23 three, four lots there, and east of the 4, 5, 12 and 13
24 lots, like so. So you see that we're restricted to start
25 off with.

1 We could have scrunched a little bit over into 7,
2 over into Lot 7 over there, but then we start moving
3 downdip. The trick is to stay as far updip as possible in
4 this field. And since at that time is that it was a little
5 bit of an unknown how far to the north we could push the
6 field.

7 Q. Okay. So moving away from your Number 1 well,
8 then, was -- added to the risk?

9 A. Right. This project was based purely on geology,
10 and which -- for a little bit of background information,
11 this area was originally mapped by Keith Williams, back in
12 1980, and it was probably a lot of his work data that I
13 based my work on.

14 Q. And that was successful?

15 A. Yes, it was.

16 Q. Did Texaco own an interest in Section 1 in the
17 past?

18 A. We have a -- We own an interest, I believe, in
19 Lot -- I can't see that it's on my map, but I think it's
20 Lot 29.

21 Q. 29 or somewhere in --

22 A. Yeah, somewhere --

23 Q. -- somewhere in the proposed -- somewhere in this
24 proposed well unit --

25 A. Right --

1 Q. -- that we're talking about?

2 A. -- immediately south of that. I believe we
3 farmed out to Faskens on that.

4 Q. Okay.

5 A. That was before my time working, so I'm not
6 entirely sure what the legal ram- -- what the land
7 arrangements were.

8 Q. Okay. Would it be fair to say Texaco didn't see
9 any potential in Section 1 at that time?

10 A. Not in that part of the section.

11 Q. Well, you couldn't have drilled a well just on
12 one lot, though?

13 A. No.

14 Q. You couldn't have drilled a 40-acre well?

15 A. But again, we've -- I believe we farmed out on
16 that location.

17 Q. How many acres is in Texaco's well unit, Section
18 12?

19 A. I believe we have 632 acres, which is consistent
20 with a normal -- essentially, they allow eight acres, plus
21 or minus, from the 640, and we're at 632.

22 Q. Okay. Have either of the Texaco wells ever had a
23 penalty assessed against them, a production like we're
24 talking about today?

25 A. No because, again, within those eight-acre

1 variances there's no production penalty.

2 Q. Do you have any opinion what the drainage area of
3 a typical Morrow well in the Catclaw Draw Pool is?

4 A. Well, based on the Number 1 well and based on
5 simply the lower Morrow C sand, it appears that it's -- as
6 if it could be a fairly significant area, it could be up to
7 640 acres.

8 Q. Does Texaco have any seismic in this area?

9 A. We have -- We've got a couple of 2-D lines, and
10 that's it.

11 Q. You don't have any 3-D seismic?

12 A. No, we have no 3-D seismic.

13 Q. Now, you listened to Fasken's testimony --

14 A. Yes.

15 Q. -- yesterday, didn't you?

16 They showed an interpretation that there is this
17 S-shaped fault. Do you agree that that would separate the
18 Mewbourne and Texaco wells?

19 A. Are you trying to say that I should accept
20 Fasken's structural interpretation?

21 Q. Do you?

22 A. I don't have the seismic, I can't comment on
23 that, and that's Fasken's observation.

24 Q. Looking at your Exception 1 [sic] --

25 A. On which one?

1 Q. Exhibit 1.

2 A. Yeah.

3 Q. You know, you show a reservoir that trends more
4 northwest-southeast; is that correct?

5 A. That's correct.

6 Q. Would that be the preferential drainage
7 direction?

8 A. That's what I believe to be.

9 Q. And Mewbourne's location is actually to the
10 northeast of you; is that correct?

11 A. That's correct.

12 Q. Now, looking at Mewbourne's location, would you
13 rather be close to or some distance away from the Fasken
14 well to the north, if you were drilling that well?

15 A. Excuse me?

16 Q. Looking at your Exhibit 1, the Fasken well to the
17 north where you have six feet marked --

18 A. Oh, the Fasken well.

19 Q. The old Fasken well.

20 A. Right, I'd rather be between my well and the
21 Fasken well. The Fasken well was -- In this particular
22 zone, this well did not -- the Fasken well did not
23 encounter any water. So you know you don't have a water
24 problem within that B zone.

25 But it was skinny on the porosity, so you know

1 that you want to move between the two wells.

2 Q. You don't want to be too close to it?

3 A. As far as where that limit is, is that I can't
4 say based on well control. I can say based on my map, but
5 again, that's interpretation.

6 Q. Okay. But I mean, being -- It increases the risk
7 to move further north?

8 A. To move further north?

9 Q. Or north-northeast?

10 A. North -- The closer that you move to the Fasken
11 well, the greater risk that you have.

12 Q. Now, you show this -- The way you show it, there
13 could -- as I look at your Exhibit 1, there could be as
14 much or more volume in this particular Morrow zone on
15 Section 1 as in Section 12; is that correct?

16 A. Yeah, and the way that I have it mapped, there
17 could also be a better location in the Fasken proposed
18 location. But this is my interpretation.

19 Q. But you see no need -- you see no need to --
20 You've granted a waiver to Fasken; is that correct?

21 A. We granted a waiver to Fasken because we're not
22 the affected party to that well being drilled, whereas
23 we're being affected by the Mewbourne proposed location.

24 Q. But you don't see any need to penalize Fasken
25 just based on it having only a half section of land?

1 A. Again, we're not the affected party there.

2 Q. I mean, that -- the acreage doesn't come into
3 play?

4 A. The acreage doesn't come into play. We're not
5 the affected party, so I can't comment on that.

6 Q. But a well at the Fasken location, wouldn't that
7 have a better chance of draining to the southeast, toward
8 the Texaco location, than the Mewbourne well?

9 A. It probably does. The way I have it mapped is
10 that I'm more worried about the Fasken location than I am
11 the Mewbourne, to tell you the truth.

12 Q. And yet you've granted them a waiver?

13 A. Again, we're not the affected party.

14 Q. Just a second, Mr. Uhl, and I'll finish up here.

15 A. Okay.

16 Q. In looking at -- I think it's your Exhibit 6,
17 this chart, what -- looking at each well, what is the line
18 pressure for each of these wells? Do you know?

19 A. I didn't have that information to draw from.

20 Q. Are the flowing tubing pressures wide open
21 against line pressures?

22 A. I didn't have that information.

23 Q. Do you know whether by opening the choke the
24 wells could have produced a greater percentage of CAOF?

25 A. Produced a greater percentage of -- Again, all

1 I'm dealing here is taking the State information and
2 presenting the State information.

3 Q. Now, of this calculated absolute open flow versus
4 what it produced, some of these wells you put in are at the
5 time when this field was prorated. Do you have any -- What
6 is the effect of prorating on these numbers you give us
7 here?

8 A. The effect of prorating is basically -- well,
9 from the date in here is that you can see that there seems
10 to be two periods of activity here.

11 There's your initial activity where most of these
12 wells are produced from the A zone during that prorating
13 period. There's a period in there where there's a brief
14 infill period during the -- where most of these B zones
15 were produced in here.

16 As far as the -- Go ahead, you have a question.

17 Q. My question is simply, what percentage of this
18 production here was affected by prorating? In other
19 words, what were the proration schedules back then, what
20 were the wells allowed to produce as opposed to what they
21 could actually produce?

22 A. I don't have that information. I imagine it was
23 for market conditions.

24 Q. So you really can't tell from this whether or not
25 some of these wells, this might have been prorated and

1 couldn't produce what -- might have only been able to
2 produce a small fraction of what --

3 A. From Mr. Williams' testimony yesterday, he didn't
4 think that any of the wells were held back by prorationing,
5 that there were no penalties assessed.

6 Q. If these wells had not been choked back, could
7 they have produced more?

8 A. Really, what -- Again, what the chart is saying
9 is that the first year's production, compared to the AOF,
10 there's a strong discrepancy there.

11 Q. Okay, but they could have produced more if they
12 wouldn't have been choked back?

13 A. If the wells were not choked back, I doubt it. I
14 doubt whether it would be significant.

15 Q. Why is that?

16 A. Because wells deplete, pressure depletes. Take,
17 for example, the Texaco well there, 29 million a day.
18 First year's production was 4 million a day. Are you
19 trying to say that well could have produced 29 million a
20 day for the first year?

21 Q. That -- Once again, that well was during the
22 period the pool was prorated?

23 A. That well was drilled prior to prorationing. The
24 prorationing existed in 1974. That well was drilled in
25 1972.

1 Q. The final questions on your Exhibit 3, are these
2 the only faults you see in the area? Are there others?

3 A. That fault is based on well control. That's --
4 The only reason that I put a fault in there was to try to
5 delineate what the western extent of the reservoir -- what
6 the western extent of the structure was.

7 As far as the cross fault down there, the minor
8 cross fault down there to the south, that was based on more
9 well control to make the contouring a little more -- to
10 flow a little easier through that area. There's a -- It's
11 a possibility that there could be more faults in the area.
12 But I did not elect to put any faults in because I didn't
13 feel that you had to.

14 If I had seismic 3-D data I might do it a little
15 differently, but I didn't.

16 I believe that structure map explains the wells
17 fairly well.

18 Q. Have you done any 3-D seismic in this area, any
19 3-D seismic --

20 A. Not in this area, no.

21 Q. -- exploration?

22 That's all I have, Mr. Examiner.

23 EXAMINER STOGNER: Thank you, Mr. Bruce.

24 Mr. Kellahin?

25 MR. KELLAHIN: Thank you, Mr. Examiner.

EXAMINATION

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BY MR. KELLAHIN:

Q. Mr. Uhl, sir, let's go through your exhibits.
Would you start with the first one, Number 1?

A. Okay.

Q. As I understand your net pay isopach, at the
Levers 2 location you have calculated 18 feet of net pay
for this package?

A. That's correct.

Q. What's your estimate of the thickness at the
Mewbourne-proposed location?

A. Again, from the map, I have greater than 10 feet.
It could be 12 feet, it could be 8 feet, it could be 15
feet in that location.

Q. On this mapping you have some smaller shaded
contour lines within the 10-foot contour lines. Are those
on 2-foot?

A. That's on -- Yeah, if you look at the legend down
in the lower-right part of the map, that's a 2-foot contour
interval.

Q. So as I move interior to the red line --

A. That's correct.

Q. -- the Mewbourne location falls somewhere between
the 10 and the 12 foot.

A. Right, and so if you would say that this map is

1 exactly the way that you're going to encounter, it should
2 be 11 feet.

3 Q. And this, with your available data, is your best
4 interpretation, using your experience and --

5 A. That's correct.

6 Q. -- and education?

7 All right. When we look at the Fasken
8 location --

9 A. Uh-huh.

10 Q. -- it appears to be slightly inside of the 18-
11 foot contour line, so it's 18-plus feet?

12 A. I have -- yeah, right, I have somewhere around --
13 if I have this location correct, I have that right around
14 the 18-foot contour.

15 Q. If you were the geologist responsible for
16 choosing between the Fasken location and the Mewbourne
17 location for this spacing unit, using this map, then,
18 there's a substantial preference for the Fasken location
19 under this interpretation; is that not true?

20 A. Could you restate that?

21 Q. Sure. It's your responsibility to choose between
22 the Fasken location and the Mewbourne location with regards
23 to the sand package on Exhibit 1?

24 A. Uh-huh.

25 Q. And you're using thickness as your criteria?

1 A. The only criteria.

2 Q. Yes, sir. Then under this interpretation,
3 Fasken's is the preferable location, is it not?

4 A. I really didn't want to get into --

5 Q. You're one of the few experts we have here, Mr.
6 Uhl, to help us decide what's --

7 A. According to the way I have it mapped is that
8 that would be a more preferred location.

9 Q. Now, your interpretation is exclusive of
10 consideration of any Cisco potential, right?

11 A. That's correct.

12 Q. Fasken was trying to package a Cisco effort into
13 this deal at their location, if I remember right.

14 A. That's correct. Based on the well control that I
15 had available to me at that time, I did not think that the
16 Cisco was a viable target in that area.

17 Q. So focusing solely on this portion of the Morrow,
18 then, if you're choosing, the Fasken location is the better
19 location of the two?

20 A. Based on solely that map.

21 Q. Yes, sir.

22 A. Right.

23 Q. Okay. Let's look at the second map, Exhibit 2.
24 Under this interpretation the Levers 2 has got 14 feet, I
25 think is what you've got here?

1 A. That's correct.

2 Q. And when I look over at the Mewbourne location
3 it's on the 10-foot line?

4 A. That's correct.

5 Q. And when I look at the Fasken location it's in
6 excess of the 16-foot contour line?

7 A. That's the way I have it mapped.

8 Q. So if I'm using this as my criteria for ranking
9 the order of preference between the Fasken location and the
10 Mewbourne location, the Fasken location wins?

11 A. It looks better, based on, solely, that map.

12 Q. Okay. When we look at the structure map --

13 A. Uh-huh.

14 Q. -- in addition to sand thickness and packaging
15 the multiple thicknesses together --

16 A. Uh-huh.

17 Q. -- to give you your greatest chance, there's a
18 structural component to this portion of the reservoir, is
19 there not?

20 A. That's very important in several of the sands.

21 Q. When we look at the structural relationship
22 here --

23 A. Uh-huh.

24 Q. -- have you identified or approximated a gas-
25 water contact?

1 A. I have on the A sand, I'm a little familiar with
2 the C sand and on the B sand, that there really does come
3 into play.

4 Q. All right, let's do it on the A sand. Can you
5 use this structure map, Exhibit 3, to show us where you
6 approximate the gas-water contact, using the structure
7 contour map?

8 A. The Continental Number 2 well in Section 2, the
9 southeast corner of Section 2, tested gas plus water and
10 quickly watered out within that -- within the A sand. So I
11 would assume, based on my knowledge, that that is on a gas-
12 water contact.

13 Q. I'm sorry, you're going to have to help me. I'm
14 lost on your map.

15 A. Okay, that's in the southeast corner of Section
16 2, the Continental well. It's called the WD Number 2 right
17 now, water disposal --

18 Q. Over on the west side. I'm on the wrong side of
19 the map. Okay. On the west side?

20 A. Right. This well.

21 Q. Yes, sir, minus 6863?

22 A. That encountered -- That tested 2.9 million a day
23 gas from the A zone.

24 Q. Okay.

25 A. And it quickly watered out.

1 Q. Where would the A zone interval be on the
2 structure map?

3 A. I would assume that that's on the gas-water
4 contact, and you would have to follow that contour around.
5 So it would be a little downdip of that bold contour line,
6 there would be a gas-water contact in the A zone.

7 Q. Okay. Does the gas-water contact, in your
8 opinion, affect any of the other sand packages in the
9 Morrow?

10 A. It affects the C sands also, but that doesn't
11 come into play as much on the structure as we see on the A
12 sand. And that's further downdip.

13 Q. Is there a structural advantage to the Levers 2
14 well, in relation to the Mewbourne location?

15 A. Right, according to the way I have it mapped, we
16 should be somewhere around 50 foot updip of their well.

17 Q. On the eastern side of the reservoir, where would
18 the gas-water contact be?

19 A. The eastern side of what reservoir?

20 Q. We're showing the south half of Section 1, this
21 spacing unit.

22 A. On which reservoir, though?

23 Q. On the B reservoir.

24 A. On the B reservoir there's not a gas-water
25 contact that I have looked at in this area.

1 Q. Okay. Why did you express a while ago that
2 you're more fearful of competition from a well at the
3 Fasken location, even though it's a standard distance back
4 from the common line, than you are from competition if the
5 Mewbourne location is drilled?

6 A. Because I believe the reservoir quality is better
7 and that you can drain a more significant area.

8 Q. At the Fasken location?

9 A. On several of the sands.

10 MR. KELLAHIN: Thank you.

11 EXAMINER STOGNER: Thank you, Mr. Kellahin.

12 Mr. Carr, redirect?

13 REDIRECT EXAMINATION

14 BY MR. CARR:

15 Q. Mr. Uhl, following up on Mr. Kellahin's question,
16 you just stated that you're more concerned about the Fasken
17 location in terms of its potential for draining Section 12?

18 A. Right, but again, that's more than 1650 feet away
19 from the lease line on our section, and --

20 Q. How close are they? Do you know?

21 A. I haven't --

22 Q. Is it substantially more than --

23 A. Yeah.

24 Q. -- 1650 feet?

25 A. Hang on for a minute. That's almost an entire

1 section away.

2 Q. Is the distance from your lease line the reason
3 that Texaco believes it is not an affected party?

4 A. That's the sole reason.

5 Q. Is it Texaco's policy to object to wells being
6 proposed by offsetting operators that are more than a
7 standard setback from their acreage?

8 A. No, sitting through the testimony here the last
9 few days, I could have objected to several if that was the
10 case.

11 MR. CARR: All right, that's all I have. Thank
12 you.

13 EXAMINER STOGNER: Thank you, Mr. Carr.

14 EXAMINATION

15 BY EXAMINER STOGNER:

16 Q. Mr. Uhl, early in the direct examination by Mr.
17 Carr you had stated that Texaco had drilled that Number 2
18 well --

19 A. That's -- Yeah.

20 Q. -- and you would expect everybody to abide by the
21 1650 rule; is that correct?

22 A. I expected that if we followed the field rules,
23 that an offset operator should also follow the field rules.

24 Q. Interesting. How do you explain for the Number 1
25 location?

1 A. The Number 1 location was drilled prior to the
2 adoption of the field rules, back in 1972.

3 Q. What were the field rules in 1972?

4 A. In 1972, I don't know. That was before my time.

5 Q. But it's unorthodox now?

6 A. It's unorthodox now, but then so are a lot of the
7 other locations in there, because there was a brief period
8 of time where there was 320-acre spacing, and a 660 setback
9 was acceptable at that time, where it's not acceptable now.

10 Q. When the 1650 was adopted, should they have
11 gotten a penalty?

12 A. Should they have gotten a penalty?

13 Q. Yeah.

14 A. Under prorationing?

15 Q. Yeah.

16 A. I think you'd almost have to have a complete
17 hearing of the field in order to adopt something like that.

18 Q. Well, that's what we're here today --

19 A. Yeah, but then --

20 Q. -- and you're proposing some penalties here, and
21 whether there's a mechanism to do it and that's
22 reinstating prorationing.

23 A. Uh-huh.

24 Q. That's what we're here today for.

25 A. Is that really the scope of this?

1 Q. You bet your -- You bet it is. And what makes
2 you think it isn't? Mr. Uhl? What makes you think it
3 isn't? Answer my question. What makes you think
4 instituting of gas prorating is not an issue at this
5 point?

6 A. Really, all we're trying to do is affect the
7 drainage of a well immediately offsetting us.

8 Q. And how can you do that? Isn't prorating a
9 tool to do that?

10 A. Yes.

11 EXAMINER STOGNER: Thank you. No questions.

12 MR. CARR: At this time we'll call our
13 engineering witness, Mr. Bittel.

14 EXAMINER STOGNER: Okay.

15 KEVIN BITTEL,

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. My name is Kevin Bittel.

22 Q. By whom are you employed?

23 A. Texaco, Incorporated.

24 Q. And where do you reside?

25 A. Highlands Ranch, Colorado.

1 Q. What is your current position with Texaco?

2 A. I'm a petroleum engineer.

3 Q. Have you previously testified before this
4 Division?

5 A. No, I have not.

6 Q. Could you summarize your educational background?

7 A. I received a BS degree from the University of
8 Kansas back in 1981.

9 Q. And since receiving that degree, for whom have
10 you worked?

11 A. All those years with Texaco.

12 Q. Are you familiar with the Application filed in
13 this case on behalf of both Fasken and Mewbourne?

14 A. Yes, I am.

15 Q. And are you prepared to recommend a production
16 penalty on the wells -- or on the Mewbourne well at this
17 time?

18 A. Yes, just the Mewbourne well.

19 MR. CARR: Mr. Stogner, at this time we tender
20 Mr. Bittel as an expert petroleum engineer.

21 EXAMINER STOGNER: Any objection? Mr. Bittel is
22 so qualified.

23 Q. (By Mr. Carr) Mr. Bittel, let's go to what has
24 been marked for identification as Texaco Exhibit Number 5.

25 A. Yes.

1 Q. What is this?

2 A. The first page, the acreage factor, Mewbourne
3 seeks a nonstandard gas proration unit of 297.88 acres, and
4 the standard proration unit is 640 acres. This calculates
5 to a 46.5-percent acreage factor or a 53.5-percent penalty.
6 It must be applied prior to an unorthodox location penalty.

7 Q. So this is one method of imposing a penalty on a
8 well on a nonstandard spacing unit in this pool; is that
9 right?

10 A. Yes.

11 Q. All right. What does the next page show?

12 A. The second page, labeled "Recommended Penalty",
13 is the basic setback from the standard -- variance from the
14 basic setback. The standard setback is 1650 from a lease
15 line. This calculated penalty is 60 percent.

16 A 660-foot -- Okay.

17 Q. Go ahead.

18 A. 660 feet is approximately 60 percent closer than
19 1650.

20 Q. And now what is the third page of this exhibit,
21 page 5- -- Exhibit 5C?

22 A. The third page is the proposed allowable factor.

23 Q. And how did you get this?

24 A. Okay, this is -- It was calculated by the product
25 of the acreage factor, multiplied by 1 minus the various

1 setback penalty. The calculated allowable factor is 18.6
2 percent, or 81.4-percent penalty.

3 Q. And is that what, in effect, you're recommending
4 here today?

5 A. Yes.

6 Q. And so the well would be permitted to produce
7 18.6 percent of some number. What number do you recommend
8 we use?

9 A. We really had a struggle with this issue, and the
10 penalty should be applied to the well's maximum flow
11 capacity at full-line conditions, not open flow potential,
12 calculated open flow potential.

13 Q. Now, if this kind of a penalty is, in fact,
14 imposed, 18.6 percent, and the well that Mewbourne proposes
15 was able to, in fact, produce 52 percent of the calculated
16 open flow during the first year, this would still be, in
17 fact, a meaningful penalty, would it not? It would have
18 the net effect of restricting production from that well;
19 isn't that right?

20 A. It would restrict some production but not very
21 much. Calculated open flow, I feel, is not realistic
22 because you never could -- Theoretically, I don't think you
23 could produce your oil calculated open flow very easily.
24 Our flow line pressure is almost 600 pound.

25 Q. If, in fact, the well that Mewbourne proposes to

1 drill was only able to produce at, say, 10 percent over a
2 year of its calculated absolute open flow, this would be no
3 penalty at all; isn't that right?

4 A. It still would be a major advantage over actual
5 sales conditions.

6 Q. You have been wrestling with how to apply a
7 penalty in a nonprorated pool of this nature, have you not?

8 A. Yes.

9 Q. You've contacted the Artesia District Office?

10 A. Correct.

11 Q. You've contacted me concerning the status of
12 prorationing in the reservoir?

13 A. Yes.

14 Q. Isn't the concern of Texaco that whatever penalty
15 is imposed, in effect, be a meaningful penalty?

16 A. Yes, we are.

17 Q. And if that required the reinstatement of
18 prorationing, that would be a way to go about imposing a
19 penalty; isn't that true?

20 A. If prorationing was reinstated?

21 Q. Yes.

22 A. Yes.

23 Q. If we look at the well in Section 12, the Levers
24 Number 2 --

25 A. Yes.

1 Q. -- what was its initial absolute open flow?

2 A. 9.48 million.

3 Q. And at what rate are you able to produce that
4 well?

5 A. We're currently producing around a little over 4
6 million a day.

7 Q. Is it Texaco's recommendation that if a
8 calculated or an absolute open flow figure is used, that to
9 offset the advantage being gained on its location that a
10 penalty -- or that an allowable factor of 18.6 percent be
11 approved by this Division?

12 A. Yes.

13 Q. That's your recommendation?

14 A. Yes.

15 Q. Do you believe that a penalty of this magnitude
16 is necessary if you're using an absolute open flow figure
17 to effectively offset the advantage gained by the
18 unorthodox location?

19 A. We want to apply it the absolute open flow?

20 Q. Yes.

21 A. I'd rather apply it to the maximum flow capacity.

22 Q. But if you're doing that, is this the magnitude
23 of penalty that's required to be meaningful?

24 A. Yes, this penalty is necessary to minimize our
25 drainage from our acreage and protect our correlative

1 rights.

2 Q. Was Exhibit 5 prepared by you?

3 A. Yes, it was.

4 MR. CARR: Mr. Stogner, we would move the
5 admission of Texaco Exhibit 5.

6 EXAMINER STOGNER: Any objections?

7 Exhibit Number 5 and subparts will be admitted
8 into evidence at this time.

9 MR. CARR: That concludes my direct examination
10 of Mr. Bittel.

11 EXAMINER STOGNER: Thank you, Mr. Carr.

12 Mr. Bruce, your witness.

13 EXAMINATION

14 BY MR. BRUCE:

15 Q. Mr. Bittel, what is the history of the flowing
16 tubing pressure of the Levers Number 2 over the last nine
17 months?

18 A. I really don't know what it has been over the
19 last nine months; I just know what it is currently. It's
20 about 1100 pounds.

21 Q. You don't have any history on that well?

22 A. There's history, but I'm not aware of it. That's
23 handled by the area office.

24 Q. Okay, so you're operating in a void here on the
25 history of the well?

1 A. I know we make 4 million a day. I know -- I
2 mean, I assume our flowing tubing pressure was higher than
3 1100 pounds initially. But I did not ask the area that
4 question.

5 Q. Could you put a compressor on that well and
6 produce more?

7 A. We are -- We're pretty much max'd out at full-
8 volume conditions. Our purchaser wouldn't take more gas
9 than he is right now?

10 Q. Do you have any idea of what reserves have been
11 produced to date from the Levers Number 2?

12 A. We made a little over a BCF today.

13 Q. Do you know if that's coming from the lower
14 Morrow or middle Morrow?

15 A. I would say that's coming mostly from the middle
16 zone.

17 Q. Okay. Do you have any idea what total reserves
18 you expect to recover from that well?

19 A. That's confidential information, and I will -- I
20 think my reserves are.

21 EXAMINER STOGNER: Hang on. What was that answer
22 again?

23 THE WITNESS: I think what I predict my well can
24 make should be confidential information, I mean, within
25 Texaco only. Can I say that?

1 EXAMINER STOGNER: You can say anything --

2 MR. BRUCE: They're asking for a pretty huge
3 penalty here. I would ask that he be requested to answer
4 that question.

5 EXAMINER STOGNER: Mr. Carr?

6 MR. CARR: I think that from a decline-curve
7 basis, what you see ultimately being the recovery of your
8 well is probably an appropriate -- I mean, it's --

9 THE WITNESS: Okay, since we have not --

10 EXAMINER STOGNER: I'm glad you said that. Thank
11 you.

12 THE WITNESS: The well has not exhibited a
13 decline yet, so it would be awfully hard to predict a
14 reserve recovery from this well right now. Right now, I'd
15 have to maybe say 3-plus BCF from the B zone only.

16 Q. (By Mr. Bruce) So your estimate isn't any
17 different than Mr. Montgomery's?

18 A. I remember Mr. Montgomery's. I think it was --
19 He said about 3 BCF, yes.

20 Q. Have you used any material balance calculations
21 to estimate reserves in this well?

22 A. No, I haven't. Actually, I was just --

23 Q. With the -- I mean, you know, you've got a
24 declining flowing tubing pressure; you've already said
25 that.

1 A. Yeah. But again, I actually didn't ask the area
2 for their full line pressure prior, and I was an engineer
3 of record at that time when this well was booked.

4 Q. So you don't know?

5 A. Not for sure.

6 Q. Have you made a calculation volumetrically of how
7 much gas is in place, say, on the -- I guess what's called
8 the B1 reservoir under Texaco's section, as opposed to
9 Section 1?

10 A. I have no -- I did not calculate what's under
11 Section 1.

12 Q. What about Section 12?

13 A. Section 12? For B?

14 Q. Yeah, I'm looking --

15 A. The only volumetric calculations I have done --

16 Q. -- or B1, yeah, what your geologist calls the B1.

17 A. I've only done some volumetric calculations
18 personally by myself for the A -- no, for the C zone around
19 the Number 1 well, not the Number 2.

20 Q. And what were they for the C zone?

21 A. I figured that the Number 1 could possibly drain
22 640 acres in the C interval and...

23 Q. So that's just -- that's the old well, the Number
24 1?

25 A. Yes.

1 Q. So that one might be draining 640 acres --

2 A. -- out of the C interval.

3 Q. -- out of the C interval.

4 A. Based on the -- That's also based on the fact
5 that the drill stem test showed a significant depletion in
6 the Number 2 --

7 Q. Is the -- So how about the Number 2? Could that
8 drain 640 acres?

9 A. It's a possibility. They can drain up to maybe
10 640 acres, maybe less, depending on their permeability,
11 porosity, and those factors.

12 Q. And so you might right now be draining Section 1?

13 A. It's a possibility.

14 Q. Once again, do you agree that the drainage would
15 be preferentially -- would be to the northwest, based on
16 your geologists?

17 A. At what interval, the A or the B? The C?

18 Q. Well, looking at the B1 and the C1, the two maps
19 he has here --

20 A. It's a possibility. I can't really say. But I
21 would have to say it's a possibility.

22 Q. Well, would it be more likely along what your
23 geologist mapped, northwest to southeast, or preferential
24 drainage toward the Mewbourne location to the northeast?

25 A. I would say, based on his map, it's thicker

1 toward Fasken's location, probably more north, but again,
2 that's based on a lot of assumptions.

3 Q. Okay, what about drainage -- Do you have any
4 drainage figures in the B1 zone?

5 A. No, I have not.

6 Q. Do you have any DST pressures in the B1 -- I mean
7 the Number 2 well, Levers Number 2 well?

8 A. Well, the state record for flowing the shut-in
9 tubing pressure is 2900 pounds on the four-point.

10 Q. What about the DST?

11 A. We did not run a DST in the B zone.

12 Q. What about in the C zone?

13 A. The C was 1360 -- 1360, 1350, give or take.

14 Q. Do you have any estimate of pressure in the --

15 A. The A zone or --

16 Q. In the Number 2 well in the B zone?

17 A. Initially, it was 2900 pounds shut-in tubing
18 pressure at day one. We have not done any pressure since
19 that time. That's surface pressure.

20 Q. Now, what is -- You know, do you have any
21 information on the flowing tubing history of the Levers
22 Number 2 well?

23 A. The Levers Number 2 again?

24 Q. Yeah. You don't --

25 A. I just told you, all I really, truly know is the

1 latest -- currently 1100 pounds pressure. I would have to
2 say that it was higher originally, had to be.

3 Q. Does Texaco think that the Levers Number 2 well
4 is producing incremental reserves in both the C1 and the B1
5 zones?

6 A. We have them commingled right now. Since the C
7 is lower pressure, I would have to say that the C is not
8 currently producing -- not right now.

9 Q. But I mean --

10 A. Okay.

11 Q. -- compared with the Number 1 well, are you
12 getting reserves out of the Number 2 well that you weren't
13 getting out of the Number 1 well?

14 A. We'll get a small incremental reserves. I mean,
15 that I don't know. I'd have to recalculate -- I'd have to
16 calculate it.

17 Q. I mean, small -- I mean, are you talking the 3
18 BCF you're getting or a smaller number?

19 A. Okay, I'd say a lot smaller number than that,
20 because the original pressure is only 1360.

21 Q. And just so we're on the same thing --

22 A. Okay.

23 Q. -- are you seeing any incremental reserves from
24 the Number 1 to the Number 2 well in the C zone, and then
25 again the same question with respect to the B zone?

1 A. Yes, the B, because that's where the zone's
2 making. Apparently the B was very -- really poorly
3 developed in Number 1 there, for it made very small
4 reserves, probably.

5 The C zone, due to the fact that it's -- starting
6 at 1300 -- you know, showing highs from the original
7 pressure of about -- you know, original pressure of C,
8 around 4500, the incremental reserves will be quite small.

9 Q. Do you agree that the Fasken well in Section 1
10 was a poor well? Not the proposed well; the old well.

11 A. Now run this by me again? I'm sorry.

12 Q. The Fasken well in Unit P of Section 1, would you
13 characterize that as a poor well?

14 A. Fasken?

15 Q. The Fasken well.

16 A. The original Fasken well, way off --

17 Q. Yes.

18 A. Yeah, it only -- Well, it made like 300 million,
19 I think.

20 Q. Would you agree with Mr. Uhl that you would want
21 to move away from that well?

22 A. Probably.

23 Q. Now, your Exhibit 6, I'm not sure who prepared
24 that.

25 A. Mr. Uhl prepared it.

1 Q. Could you have opened the choke on Texaco's wells
2 and produced a higher percentage of the calculated absolute
3 open flow?

4 A. Which one?

5 Q. Levers Number 1, Number 2?

6 A. Number 1, I mean, I really -- I have no idea
7 about the Number 1.

8 The Number 2 could possibly produce more if we
9 could sell more through the sales line.

10 Q. Okay. So it's a matter of Texaco's sales
11 contract?

12 A. The pipeline demand, I mean, we're -- you know,
13 everybody lives within pipeline demand.

14 Q. Now, let's go to your Exhibit 5.

15 A. Okay.

16 Q. The first page, Mewbourne's proposed location is
17 unorthodox, correct?

18 A. Correct.

19 Q. So is Fasken's?

20 A. That's correct.

21 Q. Shouldn't this same, to be consistent, acreage
22 factor be assessed against Fasken's acreage, as against
23 Mewbourne's?

24 A. Like Mr. Uhl said earlier, we're not in the
25 business to protest all locations here. I think their

1 location is 2075 feet away from our well.

2 Q. But you've already spoken of 640-acre drainage,
3 and -- at least in one of these zones, and those are the
4 pool rules. Texaco keeps saying, These are the pool rules,
5 640 acres.

6 A. Like Mr. Uhl said, we could apply that penalty to
7 them too. However, you know, we're not being affected by
8 the setback. Therefore, we chose not to.

9 Q. Okay. So even though Mr. Uhl is more fearful of
10 the Fasken location and the pool rules provide for 640
11 acres, no penalty is necessary against the Fasken location?

12 A. We do not seek one, no. We thought -- We were
13 not the affected party. It was up to Penwell to do that.

14 Q. Are these -- You know, you've talked about
15 drainage. Are these wells draining over a large area?

16 A. They can.

17 Q. They can, okay.

18 A. I mean...

19 Q. You know, for Morrow, at least, are these
20 channels fairly wide?

21 A. I would refer that to the geologist. Looking at
22 this map, it looks like it possibly is, at least this zone,
23 one zone is.

24 Q. This allowable factor you're proposed, would
25 Texaco drill a well with this type of penalty on it?

1 A. That's debatable. We're not seeking to do that.

2 Q. Well, I mean you're proposing it against another
3 interest owner. Do you expect anyone to drill with this
4 type of penalty?

5 A. Possibly no. However, if you move back to the
6 standard setback rules, we --

7 Q. Would you propose to your management that
8 Mewbourne move another 1000 feet to the north, close to
9 that poor Fasken well, to drill?

10 A. But there's other possible legal locations within
11 your proposed unit.

12 Q. Okay. What legal location can we have in
13 Mewbourne's proposal?

14 A. Could you drill 1650/1650? Is that possible?

15 Q. I'm asking you.

16 A. All I'm trying to do is protect Texaco's
17 correlative rights and --

18 Q. And what I'm asking is, with this penalty, number
19 one, would you drill? And you say probably not. But then
20 I'm asking you, would move it, Mewbourne's location, north,
21 closer to that poorer Fasken well?

22 A. I would have to say no. I would try to move it
23 back west. You could -- Couldn't you move to a legal
24 location going west and north? At least be 1650 feet
25 setback from the south line.

1 Q. Do you have any estimate of what, perhaps, a well
2 at Mewbourne's location might -- what its initial potential
3 might be?

4 A. I do not -- it was not my -- did not, no, I did
5 not, did not try to calculate one.

6 Q. So let me get an idea of what you're proposing
7 here. If Mewbourne drilled a well that had an initial
8 calculated absolute open flow of 2 million a day, what
9 you're proposing is that -- or what you're saying is that
10 the deliverability would be about half that?

11 A. Probably.

12 Q. And then this allowable that's 18-percent
13 allowable would be assessed against that?

14 A. Yes.

15 Q. So Mewbourne could produce 200,000 a day?

16 A. If your well is that poor, originally.

17 Q. Okay. Would Texaco drill a well with that type
18 of production?

19 A. No.

20 MR. BRUCE: I don't have anything further.

21 EXAMINER STOGNER: Thank you, Mr. Bruce.

22 Mr. Kellahin, your witness.

23 MR. KELLAHIN: No questions, thank you.

24 EXAMINER STOGNER: Mr. Carr, redirect?

25 MR. CARR: No questions.

1 EXAMINER STOGNER: No questions.

2 Let's take about a 10-minute recess.

3 (Thereupon, a recess was taken at 2:05 p.m.)

4 (The following proceedings had at 2:14 p.m.)

5 EXAMINER STOGNER: Mr. Carr?

6 MR. CARR: Mr. Stogner, that concludes our
7 presentation. I do have a brief closing.

8 EXAMINER STOGNER: Okay, is there any other
9 recalls of witnesses at this time?

10 MR. BRUCE: No, sir.

11 EXAMINER STOGNER: Mr. Kellahin?

12 MR. KELLAHIN: No, Mr. Examiner.

13 EXAMINER STOGNER: Okay, Mr. Carr, I'll allow you
14 to begin, then Mr. Kellahin, then you may end up, Mr.
15 Bruce.

16 Mr. Carr?

17 MR. CARR: Mr. Stogner, I'm getting to a point in
18 my life where my mind fails me on lots of things, but I can
19 remember yesterday.

20 And yesterday we were in a case where we were
21 facing a fault and it seemed fairly clear February the
22 20th, maybe not so clear yesterday.

23 You've got a couple of cases, really, before you
24 here today, one between Mewbourne and Fasken and another
25 one between Texaco and Mewbourne.

1 Fortunately for Texaco, we don't have to get into
2 the other dispute, and I'll tell you why.

3 If, whatever they do on the north side of our
4 section line, if they ultimately decide to drill a well at
5 the Fasken location and if the Fasken interpretation
6 presented to you here today is right, they have very little
7 impact on Texaco, and they should be permitted to go drill
8 the well. And that's all there is to that.

9 Even the Fasken witnesses, Mr. Stogner, said they
10 would perhaps drill at the Mewbourne location. And if they
11 do there, we're truly concerned. And we're concerned
12 because we believe that well is unfairly encroaching on us.

13 I think it's very clear that Texaco in 12 has in
14 its Levers Number 2 a very, very good well, and we're over
15 2400 feet back from that common line.

16 And Mewbourne, if a well is drilled there, is in
17 a -- They're only 660 feet from that line. To try and draw
18 a no-flow boundary, and admittedly -- We won't know where
19 that would be until the well is drilled, but that no-flow
20 boundary would be farther onto the Texaco acreage with the
21 well 660 from the lease line than it would be if it was a
22 standard location.

23 And if it is drilled at that location, the
24 opportunity to offset drainage from their well with
25 counterdrainage is substantially reduced. And so for that

1 reason, we are truly concerned about the Mewbourne
2 location.

3 Now, Mewbourne comes in here and they state,
4 We're here trying to avail ourselves of the opportunity to
5 produce. And that's right, they have a right to do that.

6 But I submit to you they stop short, because an
7 opportunity to produce means they get to produce what's
8 under their acreage, not what's located under their
9 neighbor's.

10 Now, when we talked with Mr. Montgomery, he said
11 he thought that there was a chance that the existing Texaco
12 wells were draining the acreage in Section 12. And our
13 testimony shows we felt we were potentially and probably
14 draining all of Section 12.

15 I think the significance of that is that any
16 suggestion that Texaco go and drill an additional well
17 north in Section 12 really cannot be supported because if
18 we may be draining 1, if we are draining 12, an additional
19 well just for correlative-rights purposes would be
20 wasteful, because it would be unnecessary.

21 And so we've come in with a penalty. And I think
22 it's fair to say that as we've looked at a penalty we've
23 contacted the District Office, we've reviewed the rules,
24 and perhaps, in fact, the tools to impose penalties in
25 fields like this, fields where there are histories that

1 have made the rules unique, the tools may not be adequate.

2 But when we come in here today we're trying to
3 wrestle with what we've got and how to offset the advantage
4 gained by the Mewbourne location and have a meaningful
5 penalty imposed on the well.

6 And I can tell you that 15 percent of the
7 absolute open flow is no penalty at all, and that a
8 million-a-day guarantee under the well, I would submit, is
9 absurd, because it puts the OCD in the business of
10 guaranteeing people of a minimum level, won't go below that
11 with a penalty, even if you're draining your neighbor, we
12 want the economics to work for you, go drill, even if it's
13 at a location that you really shouldn't be drilling at.

14 And so we came up with a formula and we put two
15 factors in it. And you know what they are: One is for the
16 amount of acreage and one is for the encroachment.

17 But I would submit to you that what we propose
18 isn't all that far from what we would do if we were
19 prorating the field. If we implemented prorationing on
20 640-acre spacing, this unit would have an allowable factor
21 of less than one. That's where we'd start.

22 And then we'd follow along behind that and
23 further limit the production because of the encroachment
24 they're gaining on the offsetting operator. If we prorate
25 it on 320s we'd start with a smaller number.

1 So just to say that, you know, we shouldn't look
2 at the acreage, I think that's wrong, because if we try and
3 move toward what would happen under proration I think we'd
4 get to the initial threshold issue being how much acreage
5 have you got that you can commit to your well, and how much
6 reserve that is recoverable do you have under that tract?
7 And then from there we go forward and we try to determine
8 what to do with the encroachment on the neighbor.

9 And our penalty is substantial, 81.4 percent. We
10 think that's necessary if it's to be meaningful when we
11 look at what wells really have done, when you compare what
12 they've really done in the first year to what the absolute
13 flow on those wells originally was. That penalty would
14 protect Texaco.

15 And Mewbourne comes in and they say, Yes, but my
16 gosh, would anyone in their right mind drill a well at this
17 location with that kind of a penalty? And I suspect we all
18 know the answer to that question is no.

19 But that's what happens, I submit, when you're
20 proposing a well and you look at the reservoir quality and
21 the location. And when you weigh those, you really
22 shouldn't be drilling that well there at all.

23 But at least before they go out to drill, they
24 ought to know that, they ought to know what the real
25 penalty ought to be, and they ought to then be able to make

1 an informed decision about whether or not that is the
2 prudent place for them to invest their money, whether or
3 not from that location they will really drain their share
4 of the reserves, or the reserves that belong to someone
5 else.

6 We would ask you to approve both locations but
7 impose a penalty on the location proposed by Mewbourne 660
8 feet from the south line in Section 1, equal to 81.4
9 percent of the calculated open flow -- or the absolute open
10 flow on that well, determined by a deliverability test.

11 And we would recommend that those tests be conducted during
12 the first two years of the well's life, every three months.

13 And that concludes my statement.

14 MR. CARR: Thank you, Mr. Carr.

15 Mr. Kellahin?

16 MR. KELLAHIN: Mr. Examiner, you recognized
17 yesterday that this was a correlative-rights issue under
18 your jurisdiction, to decide what to do about two
19 unorthodox well locations.

20 There's a simple solution, and then there's a
21 complicated solution.

22 You and I and the others in here have presented
23 hundreds of cases to you about unorthodox well locations.
24 And we can talk about the complicated solution that Mr.
25 Carr proposes.

1 It is certainly within your jurisdiction and
2 authority to ask the Director to issue a memorandum or a
3 decision terminating the suspension of gas prorationing in
4 Catclaw Draw, and very quickly you as a regulator can
5 re-establish gas prorationing. You and I and the others
6 know that that is a convenient and effective conservation
7 tool by which you can utilize a portion of it to establish
8 equity for unorthodox well locations.

9 You can, then, under that frame work take under
10 the task of the rest of the complicated approach, and that
11 is to figure out some kind of penalty factor to impose
12 against the allowables set under the proration system. And
13 we have in past cases, and if you do so in this case,
14 engaged in that complexity, trying to figure out how to
15 establish equity between the Mewbourne location and the
16 Texaco wells.

17 My approach is a simpler solution, and I think
18 sometimes a simple solution is the best solution.

19 I will defer to you in your expertise to talk
20 about whether you believe Fasken's seismic interpretation,
21 whether, in fact, that you conclude, as we have concluded,
22 that there is a significant fault that separates the
23 Mewbourne location from any competition by the Texaco well.

24 I'll leave it to you to decide that Texaco and
25 Fasken agree that the best location in which to protect the

1 spacing unit in section 1 is the Fasken location. That's
2 the location Texaco fears the most. And why? Under
3 Texaco's own analysis it's the better location.

4 When you're looking at these two unorthodox
5 locations, you're looking at one which does not have any
6 opposition; the other one does.

7 The simple solution, Mr. Examiner, is that you
8 approve the location that is not opposed and you deny the
9 location that is.

10 And with that simple solution, you have the best
11 solution. It avoids triggering prorationing in the pool,
12 it avoids trying to establish equity between this
13 hypothetical no-flow boundary, as Mewbourne and Texaco
14 compete.

15 Is there anything with the simple solution? I
16 suggest not, sir.

17 If the fault is as Fasken believes, then those
18 portion of the reserves in the Morrow on the eastern
19 portion of the spacing unit can be deferred. They're not
20 subject to any competition, they're going to stay in the
21 ground until somebody drills another infill well.

22 The portion of the spacing unit at risk is the
23 western portion. The opportunity to have an advantage, to
24 take into consideration the Cisco is a significant part of
25 Fasken's proposal. We're asking that you take the simple

1 solution and to approve the Fasken location.

2 When we try to put this in context of the
3 practice before the Division, I would suggest to you, sir,
4 that it is always a pre-requisite for an unorthodox well
5 location in which there is opposition to determine whether,
6 as an alternative option, there is a location that is
7 standard in dimension to the parties being opposed. Fasken
8 has that location.

9 In terms of resolving disputes and settling
10 differences, I think you should require the interest owners
11 in this spacing unit to drill the location first that does
12 not have the opposition. The evidence here demonstrates
13 that that, in fact, is the favorable location. Anyway, we
14 would ask for that solution, we think it's appropriate and
15 it provides equity to all parties.

16 Thank you.

17 EXAMINER STOGNER: Mr. Bruce?

18 MR. BRUCE: Well, as I said in my opening
19 yesterday, this is an unusual case.

20 Both the Applications by Fasken and Mewbourne
21 involve nonstandard units. This is necessitated by
22 unleased federal land, and so I don't think there's any
23 doubt but that a nonstandard unit is necessary and should
24 be approved.

25 I'm maybe getting ahead of myself here a little

1 bit, but I fail to understand Texaco's proposal that
2 acreage is extremely important when it comes to penalizing
3 the Mewbourne location but is irrelevant when it comes to
4 Fasken's location. Frankly, I think because of the
5 Division orders establishing what drainage is in this pool,
6 acreage is completely unimportant.

7 As to the unorthodox location, again, we believe
8 no penalty is required on Mewbourne's location. We've said
9 it before, and we'll say it again: The Division has
10 previously held that these wells are only draining 320
11 acres. Looking at all these maps that have been presented
12 today, that's what the wells have been -- or the sections
13 have been developed on, and half the wells are unorthodox.

14 But Texaco says, Rules are rules. How can you
15 say that when every -- virtually every other operator in
16 the pool has benefitted from unorthodox locations?

17 In addition, the rules require that wells in
18 adjoining sections, if they were to be totally orthodox,
19 would be at least 3300 feet apart. And in fact, the
20 Mewbourne and Texaco wells are 3200 feet apart. Thus any
21 adverse effect on Texaco is minimal.

22 Now, let's look at Texaco's correlative rights.
23 It's not entitled to all gas under its section; it's
24 entitled to an opportunity to produce it.

25 They claim that this draw prevented them from

1 moving further to the north. They could have moved further
2 to the north, further to the east, but they didn't want to,
3 somewhat further to the north. Mr. Uhl said they could
4 have moved into Lot 7, I believe. They wanted to stay
5 close to their existing production.

6 We believe that Texaco is not at a disadvantage
7 regarding Mewbourne's well. This is especially true if
8 Fasken's geology is correct. If those wells are fault-
9 separated, that will do away with virtually any advantage
10 Mewbourne may have at its application.

11 Once again, I'm kind of confused. They -- Their
12 geologist says, Fasken's location is a bigger danger to
13 Texaco than Mewbourne's, if they don't even propose a
14 penalty based on acreage. I'm confused.

15 Again, I note that, the way I looked at them,
16 Fasken's map showed that Mewbourne's location is the best
17 in the Morrow. Their location is based primarily on the
18 Cisco. The faulting they show, as I said again, shows that
19 there will be less pressure depletion from Texaco's well,
20 and it will be the better well.

21 Now, I did spend a few hours a couple weeks ago
22 looking at orders. I could only find one order assessing a
23 production penalty in this pool. That's R-5893. That
24 based a penalty on productive acreage in the well unit.

25 Mewbourne's geologist has testified that the

1 southern third or the southern half, however you refer to
2 it as, of Section 1 is completely prospective in the
3 Morrow. Thus we believe, again, no penalty should be
4 assessed.

5 Now, if a penalty is assessed, when you're
6 looking at unorthodox locations, yeah, you have to protect
7 correlative rights. But you don't just look at the
8 correlative rights of Texaco; you have to look at the
9 correlative rights of both the Applicant, Mewbourne, and
10 the protesting party.

11 If a reasonable Morrow well cannot be drilled in
12 Section 1, then based on what Texaco's engineer said,
13 Texaco's going to get those reserves.

14 In considering the unorthodox location, the
15 Division should come to an equitable decision which
16 protects all the parties. Of course, it must protect the
17 offset owner. But it must not penalize the Applicant,
18 Mewbourne, to such an extent that it's uneconomic to drill
19 the well.

20 Texaco's proposal is completely unreasonable. At
21 the producing rates they'd be talking about, at whatever
22 location in Section 1, they could never recover the
23 reserves that are under that section.

24 We believe a more reasonable penalty, as proposed
25 by Mewbourne, if one is assessed, should be assessed in

1 that magnitude.

2 Now, regarding the two competing well proposals,
3 Mewbourne and Fasken, you know, Fasken sat on this project
4 for 25 years. It's had its interests for 20, 25 years. It
5 didn't even know about the offsetting Texaco well, until
6 Mewbourne came to it two months ago. If it hadn't been for
7 Mewbourne we wouldn't be here today, because no one would
8 be proposing a well in this section.

9 Again, these are not, as I see it, competing well
10 proposals; this isn't a compulsory pooling procedure.
11 Mewbourne had the first proposal. The operating agreement
12 says, After the election period the parties shall commence
13 work on the proposed operation. Mewbourne's well was first
14 in time, first in right.

15 Furthermore, a party who agreed to participate,
16 such as Fasken, shouldn't be allowed to protest that well
17 at this time.

18 Now, in regard -- As I said yesterday, in regard
19 to the dispute between Mewbourne and Fasken, I don't think
20 geology is the determining factor. Yes, it's important.
21 Yes, the parties want to drill a good location. But the
22 operating agreement between the parties doesn't state
23 that.

24 We're asking the Division to approve Mewbourne's
25 location and either delay approval of the Fasken

1 application or approve it with the stipulation that
2 Mewbourne's well be drilled first. Such a decision is in
3 harmony with the operating agreement among the parties. If
4 you take Fasken's position, you will be issuing a decision
5 contrary to the operating agreement among the parties.

6 One final comment. This came up early yesterday.
7 Fasken wants its well drilled. The only evidence in the
8 record is that they're not an interest owner and that
9 they're not the operator under the operating agreement.
10 They're not a proper applicant, and I believe their case
11 should be dismissed.

12 Thank you.

13 EXAMINER STOGNER: This is an unusual case. And
14 each one of you has brought up some issues that I'm going
15 to be faced with. So I'm going to propose an unusual
16 situation here.

17 I'm going to continue this matter to May 1st --
18 that's my hearing -- at which time I want each and all to
19 address the issue of a compromise location that is
20 standard, pursuant to the Texaco property, at least 1650
21 from the south and 1650 from the west. This in lieu of
22 reinstating prorationing.

23 I'd suggest, Mr. Carr, that the Midland office be
24 involved, of Texaco in this matter, since it will affect
25 them.

1 MR. CARR: Yes, sir.

2 EXAMINER STOGNER: Gone are the days in which I
3 can ask the witness a question and they can tell me the
4 complete history in this pool, unfortunately. What I've
5 seen over the past many years, and unfortunately the new
6 people that have come up never had an opportunity to work
7 with those people. Very unfortunate, most unfortunate.

8 So you've got to ask yourself, do you want to
9 risk reinstating? And yes, I will very muchly so
10 reinstate prorating, Mr. Uhl, you very muchly better
11 believe it. And I suggest you talk to Mr. Frank Gray in
12 your Midland office and see if you all agree to that.

13 The penalty in which you proposed, Texaco
14 immediately goes right back into the reinstated
15 prorating. And that's the way I read it.

16 So again, I believe you see what I'm setting
17 everybody up for. Each one of you all has spent two days
18 here in Santa Fe, a lot of expense to come fight each
19 other. Have you really tried to take that expense and come
20 up with something that you can cooperate with?

21 And it still blows my mind that you guys,
22 professionals, would even consider not coming up with a
23 cooperative effort, and bring it to a lowly state employee
24 to make your decision for you. That really surprises me
25 sometimes.

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, Volume II, 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 April 17th, 1997.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case Nos. 117556 and 11723 heard by me on April 4, 1997.


 _____, Examiner
 Oil Conservation Division