

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 POGO PRODUCING COMPANY)
 FOR A NONSTANDARD GAS SPACING AND)
 PRORATION UNIT AND AN UNORTHODOX GAS)
 WELL LOCATION, EDDY COUNTY, NEW MEXICO)
)

CASE NO. 12,309

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

December 16th, 1999

Santa Fe, New Mexico

00 JAN -6 PM 9:49

OIL CONSERVATION DIV.

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, December 16th, 1999, 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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December 16th, 1999
 Examiner Hearing
 CASE NO. 12,309

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* * *

A P P E A R A N C E S

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FOR THE APPLICANT:

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FOR YATES PETROLEUM CORPORATION:

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

* * *

1 WHEREUPON, the following proceedings were had at
2 10:00 a.m.:

3
4 EXAMINER CATANACH: Call the hearing back to
5 order at this time, and we'll call Case 12,309.

6 MR. CARROLL: Application of Pogo Producing
7 Company for a nonstandard gas spacing and proration unit
8 and an unorthodox gas well location, Eddy County, New
9 Mexico.

10 EXAMINER CATANACH: Call for appearances in this
11 case.

12 MR. BRUCE: Mr. Examiner, Jim Bruce representing
13 the Applicant. I have three witnesses.

14 MR. CARR: May it please the Examiner, my name is
15 William F. Carr with the Santa Fe law firm Campbell, Carr,
16 Berge and Sheridan. We'd like to enter our appearance in
17 this case for Yates Petroleum Corporation. I have no
18 witnesses.

19 MR. BRUCE: Mr. Examiner, my three witnesses are
20 Mr. Lang, Mr. Hardie and Mr. Gasser, who were sworn in and
21 qualified in the prior hearing, and if the record would
22 reflect that they were so sworn and qualified as experts,
23 it would shorten it a little bit.

24 EXAMINER CATANACH: The record shall so reflect,
25 Mr. Bruce.

1 outline of the McMillan-Morrow Gas Pool. Those particular
2 sections are in the McMillan-Morrow Gas Pool, 640-acre
3 spacing.

4 MR. BRUCE: Mr. Examiner, the 640-acre spacing is
5 limited to those five sections by prior decision of the
6 Division, does not extend outside the boundaries of that
7 pool.

8 Q. (By Mr. Bruce) Mr. Lang, why does Pogo make this
9 Application?

10 A. Well, there's a couple of reasons. As to the
11 nonstandard unit, our geologist will show that the north
12 half of Section 7 is probably not productive in the Morrow
13 and should not be included in our well unit. And our
14 engineer will also testify that the Morrow drainage in this
15 area is not greater than normal, greater than the 320-acre
16 spacing.

17 And as to the unorthodox location, it's the best
18 location from a geologic and engineering standpoint. And
19 in addition, the working interest owners in the west half
20 of Section 12 could possibly drill an offset to us, 660-
21 foot offset, and we don't want to be put at that
22 disadvantage.

23 Q. Are there producing wells in the pool?

24 A. Yes, there's a well -- Yates Drilling Company has
25 a well 1980 from the north line and 660 from the east line

1 of Section 13 that produces. And also there's a well in
2 the northwest quarter of Section 19 that's operated by
3 Itasca Resources. Those are the only two currently two
4 producing wells in the McMillan-Morrow Pool.

5 Q. For notice purposes, could you identify Exhibit 2
6 and state who the offset interest owners are who you
7 notified?

8 A. Okay. The north half of Section 7, the operating
9 owners, Harvey Yates -- and as you can see by the exhibit,
10 there's several others, but Harvey Yates Company has the
11 majority of the interest in the north half of 7.

12 In Section 12 --

13 Q. And before you move on, all of those operating
14 rights, overriding royalty and royalty owners, were
15 notified of this hearing?

16 A. Correct, yes.

17 Q. In the north half of Section 7?

18 A. Yes, they have been.

19 Q. Okay. Go ahead, Mr. Lang.

20 A. And then in the north half-northeast of 12,
21 southwest-northeast of 12, you can see Mary Emmons and
22 various other owners have operating rights there. They've
23 all been notified.

24 The United States Bureau of Land Management has
25 an interest in the southeast-northeast and the north half-

1 southwest and the south half-southeast of Section 12,
2 immediately to the west of our proposed location.

3 Q. Its interests are unleased in that acreage?

4 A. That's true, they're unleased.

5 Q. Okay.

6 A. And then also in the south half-southwest and
7 north half-southeast of Section 12, the Yates Drilling
8 Company and several other of the Yates entities own those
9 rights, and they've also been notified.

10 Q. And again, all of the operating rights owners in
11 items 2, 3 and 4 were notified of this hearing?

12 A. Correct.

13 Q. And then finally, Yates Drilling Company is the
14 operator of the well in Section 13, correct?

15 A. That's true, and they've been notified.

16 Q. And Yates Drilling Company was notified as
17 operator of that well?

18 A. Yes.

19 Q. Okay. Now, referring back to Exhibit 1, did you
20 notify anyone in Section 18?

21 A. In Section what?

22 Q. Eighteen?

23 A. No, we own Section 18.

24 Q. Okay.

25 A. Pogo owns 100 percent of Section 18.

1 Q. And what about royalty ownership in Section 18
2 and the south half of Section 7?

3 A. Well, the royalty ownership is the same. There
4 are basically three mineral owners, and the royalty and
5 mineral ownership is the same in both tracts, the south
6 half of 7 and 18.

7 Q. And so there was no need to notify anyone --

8 A. That's true.

9 Q. -- in Section 18? Okay.

10 And finally, is Exhibit 3 simply my affidavit of
11 notice, giving notice to all of those interest owners?

12 A. Yes, it is.

13 Q. Were Exhibits 1 through 3 prepared by you or
14 compiled from company business records?

15 A. Yes, they were.

16 Q. And in your opinion, is the granting of this
17 Application in the interests of conservation and the
18 prevention of waste?

19 A. Yes.

20 MR. BRUCE: Mr. Examiner, I'd move the admission
21 of Pogo's Exhibits 1 through 3.

22 EXAMINER CATANACH: Exhibits 1 through 3 will be
23 admitted as evidence.

24 Mr. Carr, did you have any questions?

25 MR. CARR: I have no questions.

EXAMINATION

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BY EXAMINER CATANACH:

Q. Mr. Lang, all of Section 13 is currently dedicated to a Yates Drilling Company well; is that correct?

A. Yes, it is.

Q. And they were notified as operator of that spacing unit?

A. Yes, they were.

Q. Okay. Which acreage in Section 12, without going through this, was actually all covered by notice? Was it -- Well, can you describe which acreage?

A. That's unleased, or what did you --

Q. Well, what interest owners in Section 12 did you notify?

A. The north half-northeast --

Q. Hold on. The north half of the northeast?

A. Uh-huh, north half-northeast, and the southwest-northeast, the southeast of the northeast, the north half of the southwest, the south half of the southeast --

Q. I'm sorry, the last one was what?

A. The south half-southeast, and then the south half of the southwest, and the north half of the southeast. Basically, all the owners in the east half and southwest quarter of 12.

1 Q. That's what I was trying to get to.

2 A. I'm sorry.

3 Q. And have you heard from any of the interest
4 owners who own an interest in the north half of Section 7?

5 A. We've heard from Harvey Yates Company, and they
6 are not objecting to our Application.

7 Q. And you did notify, again, all the overriding
8 royalty interest owners in the north half?

9 A. Yes, we have.

10 EXAMINER CATANACH: Okay, I have no further
11 questions.

12 WILLIAM E. HARDIE,

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

15 DIRECT EXAMINATION

16 BY MR. BRUCE:

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

18 A. My name is Bill Hardie.

19 Q. Would you, again, Mr. Hardie, refer to maybe both
20 your exhibits together, Exhibits 4 and 5, identify them for
21 the Examiner, and discuss what zones you hope to test in
22 this well?

23 A. Mr. Examiner, again, it would be useful if you
24 opened both exhibits so that we could refer back and forth
25 to each one. I'll start with Exhibit 4, which is the map,

1 and again there are several components on this that I need
2 to explain before I get into the actual geology.

3 First of all, the McMillan-Morrow Gas Pool is
4 outlined there, the original five 640-acre-spaced units
5 that comprise that, that pool, outlined in the maroon
6 color.

7 I've also shown the proposed nonstandard gas
8 proration unit for the proposed Davis Number 1 well in the
9 south half of Section 7.

10 And also the cross-section which comprises
11 Exhibit 5, is shown as G-G', with the red line across the
12 pool.

13 The well symbols here are a little bit confusing.
14 All wells are shown on this map, and their TDs are shown in
15 black lettering underneath each well. So to make it a
16 little simpler I've circled with a red circle each of the
17 wells that penetrated the Morrow formation and were able to
18 test this producing interval.

19 Wells that actually have produced commercial
20 hydrocarbons from a specific sand in the McMillan-Morrow
21 Gas Pool I've designated with solid red circles. And I've
22 also shown their cumulative production, adjacent to the
23 wellbore. And then wells that produced either
24 noncommercial amounts or just had a show in that sand
25 interval I've designated with a half-filled, half-red-

1 filled, circle around the wellbore.

2 You might also pay particular attention to the
3 wells that are currently plugged out there. Only two
4 within the pool that produce: In Section 13 there's a
5 single wellbore that still produces, and in Section 19
6 there's still a producing well there. All other wells have
7 been plugged.

8 Mr. Examiner, Pogo feels that there is some
9 significant potential for infill development in this old
10 pool. It was developed between 1965 and 1968, and there's
11 been very little activity since then. And the rest of my
12 testimony will help to, I think, explain why we feel that
13 way. So I'll start with the structural element.

14 In the black, bold contours I'm showing a
15 structural map on the top of what I call the Singer sand,
16 and it's the very specific sand interval that is productive
17 within the McMillan Pool. That dips from west to east,
18 such that the western, the left side of your map, is
19 highest and the east side is lowest.

20 There's not a whole lot of significant structural
21 components, other than to note that I've highlighted in a
22 blue shading the minus-7100-foot contour. And based on
23 drill stem tests, that is the gas-water contact for this
24 specific sand, so that everything to the south and west of
25 that contour would be water-productive in the sand, and

1 everything above or to the north and west of that contour
2 line would be gas-productive, providing there was
3 sufficient reservoir quality.

4 The other component to this map is the color-
5 filled contour, and we're using shades of green, with the
6 lightest ones indicating thin sand development and the
7 darker shades indicating thick. The sand varies from a
8 thickness of about ten feet at the outer limits of the pool
9 to a maximum thickness of 41 feet along the axis of that
10 sand channel, again designated by the dark green colors.

11 So what you're seeing is, within this channel
12 system, as long as you have sufficient sand thickness,
13 everything above that minus-7100-foot contour that lies
14 within the pool would theoretically be productive.

15 The Exhibit Number 5, I've assembled this
16 stratigraphic cross-section primarily to document my
17 geologic picks for this Singer sand. And on this exhibit,
18 I show a series of five wells across the axis of the
19 channel. The Singer sand itself is highlighted in the
20 yellow color.

21 At the depth column of each well there's a red
22 bar, and that's an indication of where these wells have
23 been perforated in that sand. Two of them, you can see,
24 have very long perforated intervals. Those are actually
25 open-hole completions, so that they set pipe above a

1 certain interval and left the formation open, without
2 casing, and produced it in that fashion.

3 A couple of important things to note on this
4 cross-section are the thicknesses of the sand and their
5 relationship to the productivity. The well in the middle,
6 which is the Osage Com -- I'm sorry, I'm confused with the
7 other case. That's the Singer, the McMillan Singer well,
8 is in Section 18, and that well produced to depletion and
9 cumulatively produced 6.4 billion cubic feet of gas. It's
10 the thickest well in the unit, it produced the most gas.

11 And there's a direct relationship in this unit
12 between sand thickness and productivity, and you can easily
13 see that by comparing the map, cumulative productions and
14 the sand thickness.

15 Our concept in Section 7 is to test the idea that
16 there is infill potential here. And we feel that that is
17 the best location to test this idea and that if it is
18 successful it could lead to additional drilling in the pool
19 itself.

20 Section 7 is unique in that the sand itself
21 trends only through the south half of the section. There
22 are two existing wellbores there that produce noncommercial
23 amounts of hydrocarbons from the Singer sand. One of them
24 made 127 million cubic feet of gas and the other only 34
25 million cubic of gas before being plugged and abandoned.

1 Those wells were noncommercial due to their thin sand, did
2 not develop adequate permeability to provide commercial
3 production.

4 We believe that by moving in the southwesternmost
5 corner of Section 7 at the proposed location of 660 feet
6 from the south and west lines that we would encounter
7 sufficient sand thickness at an appropriate structural
8 elevation to test this idea that there may be sufficient
9 reservoir pressure to support commercial production.

10 The reason we think, initially, that there may be
11 existing reserves to be recovered is that, as I mentioned
12 before, the four commercial wells that were drilled in this
13 field were drilled between 1965 and 1968. By 1978, when
14 the well that I've shown as the plugged noncommercial
15 producer in the southwest corner of Section 7 -- that was
16 drilled in 1978 -- when that was drilled, the pool had
17 produced 10 billion cubic feet of gas. Today it's only
18 produced an additional 2 billion cubic feet of gas. So by
19 the time that well was drilled, most of the reserves had
20 already been produced.

21 That well, when it was completed and tested the
22 Singer sand -- and it's on the cross-section as well, as
23 the second well from the right -- it was completed only in
24 the Singer sand, and the pressure recorded in that well
25 calculates to a bottomhole pressure of about 3800 pounds,

1 which would be very minimal depletion in the sand itself.

2 And because that well encountered such a thin,
3 dirty sand section, permeability was poor and the well
4 quickly depleted after having only produced 127 million
5 cubic feet of gas. But that's an important indicator that
6 there is reservoir pressure when you step away from
7 existing production, and it's the basis for this prospect.

8 Q. Mr. Hardie, with respect to the nonstandard unit,
9 then, based on the two noncommercial wells that already
10 exist in the south half of Section 7 and the way you orient
11 your Morrow channel here, it does not appear that the north
12 half of Section 7 would contribute much to any well in the
13 southwest quarter of Section 7?

14 A. It would not contribute, in my opinion. The two
15 wells condemn the notion that you could make commercial
16 reserves from such a thin portion of the sand, at least in
17 this part of the pool. We think it's imperative that we
18 encounter more than 30 feet of gross sand in order to have
19 enough permeability and porosity to make it commercially
20 viable.

21 Q. And so the unorthodox location is necessary for
22 the reasons you stated; and as Mr. Lang stated also, Mr.
23 Hardie, if you drill a well, a good well, in the south half
24 of Section 7, the interest owners in Section 12 can --
25 without any special permission could be 660 feet off your

1 lease line, could they not?

2 A. That is correct, there is -- Even though we are
3 requesting an unorthodox location, it doesn't provide us
4 with any unfair advantage as to offsetting the operator in
5 Section 12.

6 Q. In your opinion, is the granting of this
7 Application in the interests of conservation and the
8 prevention of waste?

9 A. Yes, it is.

10 Q. And were Exhibits 4 and 5 prepared by you or
11 under your supervision?

12 A. They were prepared by me.

13 MR. BRUCE: Mr. Examiner, I move the admission of
14 Exhibits 4 and 5.

15 EXAMINER CATANACH: Exhibits 4 and 5 will be
16 admitted as evidence.

17 EXAMINATION

18 BY EXAMINER CATANACH:

19 Q. Mr. Hardie, what data do you have to utilize
20 to -- when you get up to Sections 7 and 12, what data do
21 you have to rely upon to orient that sand in that northwest
22 direction?

23 A. Well, as you can see, the well control thins
24 abruptly as you move out of the north end of the unit.
25 Morrow channel sands usually have a pretty moderate extent

1 to them. There's no reason to believe based on the
2 existing well control that the sand abruptly stops there.

3 However, just based on the comparison of
4 thicknesses, if one were to assume that the sand continues,
5 that's the most likely direction in which it would go, with
6 the thick continuing on through Section 12.

7 The north half of Section 7 is pretty much
8 condemned, at least as to this particular sandbody. And
9 this is, as of today, the only sand that is known to
10 produce commercial quantities of hydrocarbon in the entire
11 Morrow section in this area.

12 So I don't think there are any other sands, at
13 least in the Morrow, in the McMillan Pool, that would be
14 productive. They would be water-productive.

15 Q. Well, why would that be the most likely direction
16 for that sand to trend in?

17 A. Well, that's where there's no well control, Mr.
18 Examiner, so as a geologist I like to continue the trend in
19 the direction that the last well control showed it to be
20 going. And well control shows there to be a meandering
21 channel that, as it leaves the unit, heads through Section
22 12.

23 Q. Well, could that channel be more in a north
24 direction to where it takes in some of the north half of
25 Section 7?

1 A. My interpretation of the meandering nature of the
2 channel is based on a kind of a cyclical pattern that it
3 would form as it was being deposited. And I'm mimicking
4 what has been mapped to the south of this area with the
5 meander of the channel, so that when I turned it back to
6 the west, that was simply based on the pattern that had
7 already been established by the well control to the south.

8 There probably won't be much more development
9 beyond Section 12, because that's where Brantley Lake Dam
10 lies, unless somebody's willing to set a platform on Lake
11 McMillan.

12 Q. Why is it necessary to drill at that location?
13 It appears that there's been some commercial wells that
14 have been drilled in sands less than 30 feet thick.

15 A. There are some exceptions to that in Sections 24
16 and 19, and this is one of those situations where although
17 the sand was thin, the thin sand itself was all very -- had
18 very high porosity, very high permeability.

19 For some reason, as we've moved to the north, we
20 see an increased clay content in the sands. And even
21 though they may have good porosity, their permeability
22 appears to be low. And that's why I think you need the
23 thicker sand section as you move to the north. And that's
24 fairly well documented by the two dry holes, or the two
25 noncommercial wells drilled in Section 7.

1 It would be, I think, very foolish to attempt to
2 drill a Morrow sand well in the north half of Section 7,
3 based on the two noncommercial wells to the south.

4 Q. Those two noncommercial wells in the south half
5 of Section 7, the red number to the right, to the bottom
6 right, is that the sand thickness?

7 A. That's the sand thickness. The number above that
8 is the structural elevation.

9 Q. And that's gross sand thickness?

10 A. It is gross. Because these were drilled for the
11 most part in the early Sixties, the well logs are not
12 adequate to determine a good porosity value that you could
13 use to apply a cutoff, so I was forced to use gross sand
14 thickness.

15 Q. Do you know what the capability of that well in
16 Section 13 to produce is at this time?

17 A. The well in Section 13 is currently making about
18 160 MCF a day. It's pretty marginal, but it is encouraging
19 to see that it does still produce. It's been very flat for
20 a long period of time. It appears to have some kind of
21 pressure support behind that.

22 The other producer in Section 19 is probably
23 subcommercial. I think it makes about 60 to 70 MCF per
24 day.

25 EXAMINER CATANACH: Okay, I have nothing further.

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RON GASSER,

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

EXAMINATION

BY MR. BRUCE:

Q. Would you again state your name for the record?

A. My name is Ron Gasser.

Q. Mr. Gasser, could you refer to your Exhibit 6 and tell the Examiner what that shows?

A. Exhibit 6 is a plot of the total production from the McMillan-Morrow Pool.

Page 1 of Exhibit 6 shows the well count, along with the gas production for the pool.

The second page of Exhibit 6 is basically the same plot, but it includes a decline-curve analysis, where we have estimated that the ultimate recovery from the pool will be 13.2 BCF of gas.

Page 3 of Exhibit Number 6 is a volumetric gas calculation showing our estimate -- our gas gravity of .68, reservoir temperature of 157 degrees fahrenheit, with an initial pressure of 4235 pounds, an abandonment pressure of 500 pounds. For the total pool we've estimated net pay to be an average of 20 feet, water saturation of 25 percent, porosity of 10 percent.

And then we calculated the -- We put in the

1 acreage that would match our estimated recovery from
2 decline-curve analysis. So total pool drainage with these
3 reservoir parameters calculates to be 865 acres.

4 Q. And that is for all six wells that were completed
5 in this pool?

6 A. That's correct.

7 Q. So if you took those six wells, what would be the
8 average drainage per well?

9 A. I believe it's 220 acres per well.

10 Q. For six wells?

11 A. Oh, for six wells it's 158 -- There are seven
12 wells in the pool. There's a well in Section 26 that's
13 included in that plot. If you put seven wells in there --

14 Q. Okay.

15 A. -- then it's 220 acres.

16 Q. Now, if you -- no, but -- so seven wells -- Well,
17 no, that would be what? Less than --

18 A. Oh --

19 Q. -- a hundred and some acres?

20 A. I don't have my calculator. But if memory serves
21 me correctly, the seven wells was 158 acres, and the six
22 wells was 220 acres.

23 Q. Four.

24 A. Four wells was 220 acres?

25 Q. If you included only the four commercial wells in

1 this pool, in that 865 acres of drainage --

2 A. Okay, then that's the 220 acres.

3 Q. So roughly 220 acres --

4 A. Yes.

5 Q. -- per well?

6 A. Sorry.

7 Q. And then why don't you move on to Exhibit 7 and 8
8 together and discuss the two wells that are still producing
9 in the pool?

10 A. Okay, Exhibit 7 and 8 are the production plots
11 for the two existing wells within the pool. Exhibit 7 is
12 the State 19 Com well, which has produced to date 2.3 BCF
13 of gas, and I included its expected decline where the EUR
14 expected for the well is 2.4 BCF of gas.

15 The second page of Exhibit 7 is the same
16 volumetric calculation for the McMillan-Morrow Pool, in
17 which I used the initial pressure and back-calculated
18 drainage area for that well, which calculated to be 229
19 acres.

20 Exhibit 8 is the same presentation for the Pecos
21 River Deep Unit well in Section 13. You can see that it
22 also has an expected decline placed on it for an ultimate
23 recovery of 1.7 BCF of gas. And using the aforementioned
24 parameters, I've back-calculated a drainage area for that
25 well of 71 acres, which leads us to believe that the

1 drilling and completing of this well, if it is successful,
2 would not drain any of the reserves that are expected to be
3 recovered from the two existing wells that are producing
4 within this pool.

5 Q. So in other words, drainage in this pool is
6 really 200 acres or less, roughly, for each of these wells?

7 A. Yes, that's correct.

8 Q. And so as a result, number one, you wouldn't have
9 any adverse effect on anyone due to the unorthodox
10 location?

11 A. That is correct.

12 Q. And also drainage from this well would probably
13 be confined to the south half of Section 7? In other
14 words, it wouldn't be draining anything, if there is any
15 reservoir in the north half of Section 7?

16 A. That is correct. We don't believe that we would
17 see drainage that far away.

18 Q. Were Exhibits 6 through 8 prepared by you or
19 under your direction?

20 A. Yes, they were.

21 Q. And in your opinion is the granting of this
22 Application in the interests of conservation and the
23 prevention of waste?

24 A. Yes, it is.

25 MR. BRUCE: Mr. Examiner, I move the admission of

1 Exhibits 6, 7 and 8.

2 EXAMINER CATANACH: Exhibits 6, 7 and 8 will be
3 admitted as evidence.

4 EXAMINATION

5 BY EXAMINER CATANACH:

6 Q. Mr. Gasser, do you have any idea why this pool
7 may have been initially spaced on 640?

8 A. No, I don't. I briefly read through the
9 testimony yesterday, and my recollection is vague as to why
10 it was set up on 640 acres. I don't.

11 Q. Do you know what the discovery well for this pool
12 was?

13 A. No, I don't. Mr. Hardie does, I can get that.

14 MR. HARDIE: It was the well in Section 18, the
15 6.4-BCF well.

16 EXAMINER CATANACH: Okay, thank you.

17 Q. (By Examiner Catanach) And you did not do a
18 separate drainage calculation for that well in Section 18?

19 A. No, but I did it in my head. And you know, with
20 doubling the pay, basically it produced half the reserves
21 from the reserves from the reservoir, and we calculated 829
22 acres. So if you take half of that, that's around 400
23 acres.

24 You double your pay, that's going to decrease
25 that by half, so it's a 200-acre drainage, when you plug in

1 40 feet for height.

2 Q. So that's your estimate, about 400 acres for the
3 well in Section 18?

4 A. Yes, sir.

5 MR. BRUCE: Did you say 400 or 200?

6 THE WITNESS: I'm sorry, I said 40 feet, 200
7 acres. See, the entire reservoir drained 829 acres, and it
8 produced approximately half of the reserves, so you're down
9 to 400 acres. And then you double your height, so then
10 you're down to 200 acres.

11 Q. (By Examiner Catanach) I'm sorry, on the State
12 19 Com Well Number 1 you have 14 feet of net pay with a
13 drainage area of 229 acres. So how much net pay would you
14 have in the well in Section 18? It would be --

15 A. Forty feet.

16 Q. Forty feet?

17 A. Yes.

18 Q. So wouldn't you double that drainage area?

19 A. No, what we did in these calculations is, we took
20 the expected recoverable gas and we backed in a drainage.
21 So see, the difference between the State 19 Com calculation
22 and the well in Section 18 would be the 6 BCF versus the
23 2.4 BCF, so you'd have to triple it to be an equivalent
24 volumetric there.

25 If we could go to the section -- I think if we go

1 to Section 6 calculations -- I mean, Exhibit 6, for total
2 field calculations and we look at that, it will become a
3 little bit clearer.

4 What we've done here is, we've put in recoverable
5 gas estimated to be 13 BCF of gas. And then we put in
6 average reservoir parameters to calculate what the expected
7 drainage would be for that total pool.

8 Now, in Section 18, rather than 13 BCF of gas
9 we've made 6. So you would basically divide -- That
10 divides it by 2, which would mean the acreage would be
11 around 430 acres. And we used 20 feet, so if we put in 40
12 feet for height, then that divides it by 2 again, which
13 gets us down to the 200-acre drainage that I've estimated
14 for the well in Section 18.

15 Q. What do you estimate to be the recovery from the
16 well that you're going to drill in Section 7?

17 A. I haven't done any volumetric calculations for
18 that, but in our prospect meetings my recollection is that
19 I believe we'll make somewhere between 1 1/2 and 2 BCF of
20 gas.

21 Q. And what would you assume the drainage area to be
22 for the new well, approximately?

23 A. Let's see. If I were to approximate it, I would
24 say that the average drainage in the south half of that
25 section is going to be about 20 feet. So if you were to

1 look at the 2-BCF calculation with the 20 feet of height,
2 you're down to the 229 acres -- Well, no, that's not
3 correct, we don't have...

4 Well, basically you could average the two
5 producing wells that have similar type of reserves and have
6 -- one has 32 feet of height and one has 14. So you
7 average the 290 total, divided by 2, would be about 150
8 acres, is what we would expect that.

9 And that assumes we encounter original reservoir
10 pressure, and we probably won't do that here. We should
11 have some -- should feel some type of depletion from the
12 good well in Section 18. So that has to be included, which
13 would probably expand the drainage above that 170 acres.

14 Q. Do you think there's a chance to drill a
15 producing well in Section 12?

16 A. Yes, I believe there is, if -- you know, based
17 off the net pay. As Mr. Hardie stated, the problem we're
18 having when we go north is a decrease in permeability. So
19 the further we move to the north, the more risk associated
20 with reservoir-quality rock. But yes, there is potential
21 for a producing well in the southeast quarter of Section
22 12.

23 EXAMINER CATANACH: I have nothing further of
24 this witness.

25 MR. BRUCE: The only thing I have, Mr. Examiner,

1 is if the Division sees fit to grant this Application, Mr.
2 Lang, is there a deadline, a lease-expiration deadline?

3 MR. LANG: We've got a January 15th expiration.

4 EXAMINER CATANACH: There being nothing further,
5 Case 12,309 will be taken under advisement. Thank you.

6 (Thereupon, these proceedings were concluded at
7 10:42 a.m.)

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12 I do hereby certify that the foregoing
13 is a complete record of the proceedings of
the Examiner hearing of Case No. 12309
14 heard by me on December 16, 1999
15 David Catanach, Examiner
16 Of Conservation Division
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