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 ENRON OIL AND GAS COMPANY TO AMEND DIVISION ORDER NO. R-10,109, PROMULGATING SPECIAL RULES AND REGULATIONS FOR THE RED HILLS-BONE SPRING POOL, AND FOR THE ASSIGNMENT OF A SPECIAL DEPTH BRACKET ALLOWABLE, LEA COUNTY, NEW MEXICO

CASE NO. 11,375

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING



BEFORE: MICHAEL E. STOGNER, Hearing Examiner

October 5th, 1995

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, October 5th, 1995, 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

October 5th, 1995
Examiner Hearing
CASE NO. 11,375



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E X H I B I T S

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* * *

A P P E A R A N C E S

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By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 10:04 a.m.:

EXAMINER STOGNER: Call Case Number 11,375.

MR. CARROLL: Application of Enron Oil and Gas Company to amend Division Order Number R-10,109, promulgating special rules and regulations for the Red Hills-Bone Spring Pool, and for the assignment of a special depth bracket oil allowable, Lea County, New Mexico.

EXAMINER STOGNER: At this time I'll call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr and Berge. We represent Enron Oil and Gas Company in this matter, and I have three witnesses.

EXAMINER STOGNER: Any other appearances?

Will all three witnesses please stand to be sworn at this time?

(Thereupon, the witnesses were sworn.)

EXAMINER STOGNER: Mr. Carr?

PATRICK J. TOWER,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. Patrick Tower.

Q. Mr. Tower, where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Enron Oil and Gas Company.

Q. And what is your current position with Enron?

A. I'm a petroleum landman.

Q. Have you previously testified before this Division?

A. Yes, I have.

Q. At the time of that testimony, were your credentials as a petroleum landman accepted and made a matter of record?

A. Yes, they were.

Q. Are you familiar with the Application filed in this case on behalf of Enron Oil and Gas Company?

A. Yes, I am.

Q. And are you familiar with the status of the lands in the area which is the subject of this Application?

A. Yes, I am.

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

EXAMINER STOGNER: They are.

Q. (By Mr. Carr) Mr. Tower, would you briefly summarize what Enron seeks with this Application?

A. Yes, Enron Oil and Gas Company seeks to amend Division Order Number R-10,109, which promulgated special rules and regulations for the Red Hills-Bone Spring Pool. These amendments we seek so as to permit a change of the 150-foot setback rule to that of 330 feet. In addition, we are applying for an increase in the depth bracket oil allowable to 660 barrels of oil per 80-acre unit, and to allow for an additional well to be drilled within the current 80-acre spacing unit.

Q. What are the current spacing and well-location requirements for this pool?

A. Currently they are 80-acre spacing, with the well locations to be required 150-foot setbacks from the center of each quarter-quarter section in the 80-acre tract.

Q. You indicated that these rules were adopted by Order 10,109?

A. Yes.

Q. Was that order entered pursuant to an application filed in this matter by Enron?

A. Yes, it was.

Q. And do you know approximately when the special pool rules were adopted?

A. Yes, they were adopted in -- thank you, effective April 26th, 1994.

Q. Mr. Tower, have you prepared exhibits for

presentation in this hearing?

A. Yes, I have.

Q. Let's go to what has been marked for identification as Enron Exhibit Number 1. Would you identify that and review it for the Examiner, please?

A. Yes, Exhibit Number 1 is a land plat depicting several things off the scale of 1 to 2000, off the Midland Map Company.

If you'll notice, there are two outlines on the plat. The interior outline is a purple outline, and this is currently the existing outline of the Red Hills-Bone Spring Pool. The outside red outline is in essence the field boundaries of what we see as the Red Hills Pool currently. I believe our geological witness will further substantiate this, based on the geology, with the red outline being in essence the area that we are applying for in this -- in these -- to have these amendments apply to these particular pool rules.

Also within this land plat, the blue coloring of acreage represents all the federal leasehold within this area.

The green represents one state lease that falls within this pool boundary.

One thing is clarification. I will point out on this land map, in Section 7 of Township 25 South, 34 East,

you'll see in the northwest quarter and also the southwest quarter a couple gas symbols. Those are erroneous. Those are actually oil -- should be oil symbols. Midland Map has those wrongly depicted. Those are Bone Spring oil wells.

Within this field, Enron is the operator of the entire field outline in red.

And I believe that's it.

Q. Are there other operators in the Bone Spring formation outside the pool boundaries defined by the Division but within a mile of that boundary?

A. Yes, there are other operators. However, I do not believe that any of these operators currently have any Bone Spring wells in this one-mile boundary.

Q. And who are those operators?

A. Those operators to the east or southeast of this pool, you have Yates Petroleum. Also to the east Aztec or now it's operated by Meridian Oil.

To the west you have Hallwood Petroleum. And to the north or northwest you have Meridian.

However, I will point out that also surrounding the entire pool, the majority operator of most of the wells in that area is Enron as well.

Q. Now, Mr. Tower, Enron is proceeding to change the setback requirements for wells in the pool. Could you explain why?

A. Yes, we have -- Within this are we've encountered approximately six -- had to go to I believe it's been six hearings and possibly nine location moves due to primarily archeological and/or drainage reasons through this whole field area.

Q. These have been cases seeking approval of unorthodox well locations?

A. Yes, they have, but the main reason was the BLM requirements. And we believe that all but one of these, if we would have had the 330-foot setback rule, that it would not have necessitated the hearing.

Also, I believe, as further testimony will come from the engineer as to the drainage, by allowing the flexibility of 330 will allow us to move away in some situations to prevent additional drainage.

So it does add some flexibility to properly develop the field.

Q. It not only would allow wells to be drilled closer together, but it would enable you to move them farther apart if necessary --

A. Yes.

Q. -- is that right?

How many wells does Enron anticipate still drilling within the area shown in blue?

A. The possibility exists, anywhere from 15 to 20

wells, whether it be new wells or infill wells combined.

Q. So by moving or changing the well-location requirements, you not only would have additional flexibility, but it would result in potentially fewer administrative proceedings --

A. Yes.

Q. -- as you go forward?

A. This is correct.

Q. Will correlative rights problems result from this change in the well setback requirements?

A. We don't believe they will. And as we pointed out, Enron is the operator of the entire field.

However, we will point out, in the northern portion of the field we have a joint operating agreement, covers several sections. Enron owns 96 percent with two other partners. However, the interest is uniform working interest no matter where we drill.

To the western side of the field, we have an additional working interest joint operating agreement again, where the partners involved -- we are pretty well uniform, with again, Enron owning the majority at 72 percent.

To the southern end of the field, though, Enron owns 100 percent of the leasehold towards that end. However, it's generally one operator, and in most areas we

share common agreements.

Q. Mr. Tower, have you reviewed this proposal with representatives of the Bureau of Land Management and also the State Land Office?

A. Yes, we notified both parties. I have directly spoken to the State Land Office, to Pete Martinez, and also specifically the engineer, G.F. Albers, and reviewed this Application. They did not have any problem with it.

You'll note on the state lease we already have two existing wells that are com'd with 80-acre standups. But we do physically already have two wells on the state tract. However, discussing what we are applying for, they had no problems.

I also directly talked to Adam Salameh, who's an engineer in the Carlsbad Resource Office, and both their Albuquerque and their Roswell office were also notified. However, in my conversation with them they had no problem.

Q. Mr. Tower, is Exhibit Number 2 an affidavit with attached letters and return receipts confirming that notice of this Application has been provided to all operators in the pool and all operators in the Bone Spring formation within a mile thereof?

A. Yes.

Q. Will Enron be calling geological and engineering witnesses to review those aspects of this case?

A. Yes, we will.

Q. Were Exhibits 1 and 2 either prepared by you or compiled under your direction?

A. Yes, they were.

MR. CARR: Mr. Stogner, at this time we would move the admission into evidence of Enron Oil and Gas Company Exhibits 1 and 2.

EXAMINER STOGNER: Exhibits 1 and 2 will be admitted into evidence.

MR. CARR: And that concludes my direct examination of Mr. Tower.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Tower, referring to Exhibit Number 1, you said that the purple is the nomenclature or the pool outlines --

A. Yes.

Q. -- pursuant to our nomenclature; is that correct?

A. Yes, sir.

Q. And the red is depicting the field?

A. Depicting the field boundaries. And in some cases, you'll note, we have already drilled into those boundaries outside the purple; I believe just the nomenclature has not caught up with it yet.

Q. Okay. Why don't you give me a little definition

of what you mean by "field"?

A. If it's all right, I may defer that to Barry Zinz. It's based on the geological testimony and the drilling and the existence of 30-some wells, the boundaries, and he can get into that, probably more properly, with the geology.

Q. Okay, fair enough. So it more depicts the geological boundaries?

A. Yes.

Q. As opposed to lease lines?

A. That is correct.

Q. Now, you said that the setback requirements primarily are being requested due to archeological and drainage?

A. Surface drainage, yeah --

Q. Surface.

A. -- in this area we have had problems with various terrain, and in most cases we have been able to work around this with -- not large moves, but we have consistently had to move quite a number of these locations. Not all have required hearings, as we've tried to work with the BLM to find one to prevent a hearing.

Q. I just wanted to make sure that you had meant surface drainage in here.

A. That is correct, surface.

Q. Okay. Of the outline shaded blue, which depicts the federal leases, which predominantly takes in your so-called field boundary, how many of those leases are operated by Enron or owned by Enron?

A. We operate 100 percent of those, and we own the majority interest in all of those, 72 up to 100 percent of the interest.

Q. How many separate leases would you say are out here?

A. I would say -- I would say approximately 12 to 15.

Q. And again, who all was notified?

A. All of the -- all of our -- Well, to begin with on the list, on Exhibit Number 2, the second page, the Bureau of Land Management and the Commissioner of Public Lands, which I spoke to, Southland Royalty Company and/or Meridian, who's an offset operator, the Petroleum Synergy Group, which is a nonoperated partner of ours in one of the JOAs.

Exxon Corporation owns a 40-acre tract approximately a mile away from the edge of the pool, what I'm calling the geological pool boundary.

EM Nominee Partnership Company and Hallwood Petroleum, which are part of the Hallwood group, are our partners in one of the operating agreements, also offset

operator.

Sol West III and Michael Shearn are partners of ours in the JOA. Roden Associates, Limited, is a partner. Kaiser-Francis is a partner in the JOA. Yates Petroleum Corporation is an offset operator.

Q. For the most part, the operators are listed in Exhibit A of Exhibit 2. Are they -- Do they depict the working interest in this blue-shaded area?

A. Do they -- If I understand, do they also own an interest in there?

Q. Yes.

A. They also -- Some of these do. The ones I mentioned, specifically Petroleum Synergy Group; EM Nominee Partnership Company; Hallwood Petroleum, Inc.; Sol West and Michael Shearn; Roden Associates, Limited -- and I believe that's it -- are interest owners in the outlined area. Some of these are also operators outside that area.

Q. Have you had the opportunity in preparing this map to find or know of any close pools in the Bone Spring formation surrounding this area?

A. I don't believe -- And again, Mr. Cate or our next witnesses may be better prepared to answer. But to the best of my knowledge, I don't believe there's another pool, several townships or for some large area near this, in the Bone Spring.

EXAMINER STOGNER: Okay. With that, I have no other questions of Mr. Tower. He may be excused.

MR. CARR: At this time we call Mr. Zinz.

BARRY L. ZINZ,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. Barry L. Zinz.

Q. And where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Enron Oil and Gas Company.

Q. And what is your current position with Enron?

A. Geologist.

Q. Have you previously testified before this Division?

A. I have.

Q. At the time of that testimony, were your credentials as a petroleum geologist accepted and made a matter of record?

A. Yes, they were.

Q. Are you familiar with the Application filed in this case on behalf of Enron Oil and Gas Company?

A. Yes, I am.

Q. Have you made a geological study of the area which is the subject of this Application?

A. I have.

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

EXAMINER STOGNER: They are.

Q. (By Mr. Carr) Mr. Zinz, have you prepared exhibits for presentation here today?

A. I have three exhibits.

Q. Let's go to what has been marked Enron Exhibit Number 3. I'd ask you to identify that and then review it for Mr. Stogner.

A. Exhibit Number 3 is a structure map on the -- what I refer to as the Wolfcamp marker. It's below the pay sands that we produce in the Red Hills field. The contour interval is 50 feet.

If you look down at the legend on the map, you'll see that several things are distinguished there. Stars are -- These purple stars are found associated with several of the wells within the field. These are wells with drainage area calculations. And our engineer, Mr. Cate, will refer to these particular wells.

Also have a type log that I want to show you. It's identified on the map as well.

And the field boundary in red matches the boundary that Mr. Tower referred to in his testimony.

The map -- Structurally speaking, the production from the third Bone Spring sand within this field is not really influenced that much by structure. What I mean by that is that we do not really see any significant water production, there's no oil-water contact in these sands.

But the variability within the sands do exist. We have thin and thick areas, and sometimes the thin wells produce very well, even if they -- they're not of the thicker nature. And it's possible that these little structural features that you see on the map influence and enhance the -- possibly the fracturing of the sands. This is the reason why I wanted to bring that out.

Q. Let's go now to Exhibit 4, the type log.

A. Okay. The type log, Exhibit 4, is the Half "7" Fed Number 1. It's located in the southwest quarter of Section 7. And there again, it is the well that has the orange square located around it.

What I'd like to point out here is, you see the whole third Bone Spring sand interval from the top of the sand unit down to the top of the Wolfcamp. You see the pay sand outlined there, denoted by the third Bone Spring pay sand. The perforations are opposite the porous sand there.

Also the Wolfcamp marker is distinguished on the

log, which this map that we just referred to was based on. And we have some completion information at the bottom of the log.

Q. Mr. Zinz, let's now go to Exhibit Number 5, across the isopach. I'd ask you to identify it, review the information on it, and then compare it to the area outlined in red on our Exhibit Number 1.

A. This map is a porosity isopach map of the third Bone Spring pay sand within the field. It's based on a density porosity greater than or equal to 9 percent, which is the cutoff that I used here.

Again, this map is a -- has a contour interval of 20 feet, and again, the legend, the same legend, applies to this map as we discussed on the previous map.

The field boundary -- This is the main map, which the field boundary, the red outline, is really based on.

This field right now has like 33 producers in it. We just got through drilling one within the last couple of days. I think it will be a producer here shortly.

The field is within the later stages of primary development, and this is the way I have interpreted the field outline, based on the porosity encountered in the producing wells and lack of porosity in the well control adjacent to the field.

Q. Generally describe the nature of the Bone Spring

formation in this area.

A. The Bone Spring is a sand. It's a very fine-grained sand, very, very tight. We have several cores within the sand, in the field. The permeability varies quite a bit, and the production varies quite a bit. You have tight areas versus better permeable areas, and it requires a frac on all these wells, and Mr. Cate will get into that more.

Q. Mr. Zinz, in fact this Exhibit Number 5 is the basis for the boundaries of the field as shown on Enron Exhibit Number 1; is that correct?

A. That's correct.

Q. And this is the geological interpretation of the reservoir that was utilized by Mr. Cate in preparing his engineering drainage calculations?

A. That's correct.

Q. Were Exhibits 3 through 5 prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Stogner, we would move the admission into evidence of Enron Oil and Gas Company Exhibits 3 through 5.

EXAMINER STOGNER: Exhibits 3 through 5 will be admitted into evidence at this time.

MR. CARR: And that concludes my direct examination of Mr. Zinz.

EXAMINATION

BY EXAMINER STOGNER:

Q. Your control seems to be somewhat substantial back up to the north and the east. However, over to the west is there anything to lead you to believe that this is the pool or the structural or the productive boundary?

A. As far -- Like I said, really, structure does not seem to be the key issue here; it's the porous sand. And the wells that you see within the mapped area is all the well control we have.

There are some other wells off the mapped area to the west. There's one well over there that we actually re-entered and tried to complete within the sands, and we were unsuccessful. It's off the mapped area, actually over in Section 15.

So I think that this is a legitimate picture of the porosity, the end of the porosity and the permeability from the well control we have.

Q. Going back to your type log, are all your other wells that are producing in this area, or producing from this pool, are they perforated in the top of that third Bone Spring pay sand?

A. Yes, sir. That interval you see is basically the sand interval, although it does thicken and thin, and our perforations are confined to that sand interval.

Q. Nothing else in the upper portion of that Bone Spring formation?

A. No, sir.

Q. Now, again, looking at Exhibit Number 5, there seems to be -- What? There's one plugged and abandoned well over there in the south half of 13, two of them actually. And then over there in Section 18 there's a well in the south half. Is that just a location or --

A. The well in 18?

Q. Yes.

A. That's the one we have just finished drilling, and we will be attempting completion on it probably within the next week or ten days.

Q. Okay.

A. And I'm here to tell you that it didn't come in at no 70 feet like I had it mapped; it come in a lot thinner. So we're definitely reaching the limits of the field down there.

Q. How about the two wells in the southeast quarter of Section 13?

A. Those are shallow wells denoted by the TDs there of 5400 feet and 5375.

Q. So that Well Number 5 is essentially your southernmost point at this time?

A. Yes, sir. It's not incorporated within -- on

these exhibits, because like I say, we just got it logged yesterday.

EXAMINER STOGNER: Okay. I have nothing else further at this time.

MR. CARR: Nothing further of Mr. Zinz.

EXAMINER STOGNER: He may be excused.

MR. CARR: At this time, Mr. Stogner, we call Randy Cate.

RANDALL S. CATE,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. My name is Randall Cate, C-a-t-e.

Q. And where do you reside?

A. I reside in Midland, Texas.

Q. By whom are you employed?

A. I'm employed by Enron Oil and Gas.

Q. And what is your current position with Enron?

A. I'm a petroleum reservoir engineer.

Q. Mr. Cate, have you previously testified before this Division?

A. Yes, I have.

Q. At the time of that testimony, were your

credentials as a reservoir engineer accepted and made a matter of record?

A. Yes, they were.

Q. Are you familiar with the Application filed in this case on behalf of Enron Oil and Gas Company?

A. Yes.

Q. And have you made a drainage area study of the wells in this particular Bone Spring pool?

A. Yes, I have.

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

EXAMINER STOGNER: They are.

Q. (By Mr. Carr) Could you initially just describe for Mr. Stogner the nature of the study or type of study that you have made in this reservoir?

A. All right. The type of study that I did, I incorporated reservoir data that we've collected from logs and buildups, other engineering diagnostic tools; we got some core data out there. Incorporated that into the drainage -- Well, excuse me, actually the estimated declines that we have projected, which Exhibit 6 has approximately 13 of the 33 producers.

I've studied those as a representative cross-section of the field, some thin wells, thick wells, primarily ones that we've got some producing history on.

And using the reservoir data and the expected ultimate recoveries off decline-curve analysis, I've arrived at a calculated drainage acreage for the 13 wells.

Q. In selecting these wells, have you been able to utilize wells that are located throughout the area which is the subject of this hearing?

A. Yes. On Exhibit Number 5 the purple stars designate the wells with the drainage area calculation. That's the isopach map; it shows the sand thickness.

And as you can see, I tried to bring at least one in from each of the -- It appears there's six to seven sections of producers out here, and I tried to bring at least one in. Some sections have three wells. But we've included wells throughout the field in the sampling here.

Q. And these wells are representative, in your opinion, of all the wells located in this field?

A. Yes.

Q. Let's go to Exhibit Number 6. Would you first identify and then let's just work through this.

A. Okay, Exhibit Number 6 is -- It's got two pages of calculations based on reservoir data, and then the results that I have seen and conclusions. And then there are 13 decline curves that give an estimated ultimate recovery for each of the wells that have been described, and the drainage calculations have been performed on the

first page.

Q. Okay, let's go to the first page, and I would ask you to review the reservoir data that you used in making your calculations.

A. Okay. At the top of the page the average porosity in the pool is approximately 12 percent, again off core data and logs primarily.

Average oil saturation is approximately 60 percent. The formation volume factor for the oil is 1.8. Recovery factor is predicted to be 18 percent. We've run some simulations, reservoir simulation models, that would predict a recovery factor in that range.

The decline type is hyperbolic. The recoverable oil per foot, using this data -- porosity, oil saturation, formation volume factor -- would be 55.86.

I used that in the calculations below, simply by taking the decline, the EUR, and dividing it by the pay that Mr. Zinz has calculated for each well, and then dividing it by the barrels, oil acre-feet recoverable. to arrive at the drainage acres.

Again, the field does have 33 producers currently on 80-acre spacing units. We have done some static bottomhole pressure measurements as we complete these wells, and we have seen little or no effects from offset wells on the initial completions from a pressure drainage

basis. So that there does also support perhaps the 40 acres or in that range, would be needed out here on these spacing units.

The second half of the page shows the calculation of the drainage area for the 13 selected wells. The variability can be seen in the estimated ultimate recoveries that Mr. Zinz also spoke about. It's tabularly shown here, the variability in the thickness of pay.

And subsequently you have highly variable drainage acres calculated. Along with that, I show a summary for the wells that we have the data, permeabilities, effective to oil, based on buildups and special core analyses.

On the second page, then, I give a result of the first page, basically the drainage calculations on 13 wells, for a range of from 14.8 acres up to 181.2. I would note that the 181.2 is a very thin well, pay qualitywise. It's the Hallwood 12 Number 7, and it's a very good well. And because it is a thin pay, it does calculate very high. I personally believe that there's probably thicker pay closer by.

Again, the drainage calculations for the 13 wells show an average of 60.4 acres per -- well, per 80-acre unit.

Also, the measured effective permeabilities range

from .017 millidarcies to .13 millidarcies, and there's a good relationship of permeability to the calculated drainage areas.

And a summary of the 13 wells, only two calculate to drain more than 80 acres, seven will drain between 40 and 80, and four will drain less than 40 acres.

Q. All right, what conclusions have you reached?

A. Our conclusions are that many of the 80-acre spacing units will need two wells to fully and efficiently drain that acreage. And it would -- If we were not granted that, we would be leaving recoverable reserves in the ground.

Q. Now, attached to these two summary pages are your decline curves?

A. Yes.

Q. Is this the supporting information for the conclusions and the data contained in the first two pages of the exhibit?

A. Yes, it is.

Q. If your Application is granted and you are authorized to put additional wells in the pool and increase the rate at which you produce them, are you going to be actually increasing ultimate recovery from the reservoir, or would we be just looking at rate acceleration?

A. We will be increasing the ultimate recovery of

this reservoir.

Q. Enron is also seeking a change in the rules to provide additional flexibility in where wells are located on the spacing units?

A. Yes.

Q. What are the real benefits that you see in making that change?

A. It will allow flexibility in where we position the wells, even greater distance between wells where it needs to be, and it would also allow us to not have to come in for as many unorthodox-location hearings, as Mr. Tower has previously talked of. And it would just give us the flexibility to better position the wells for optimum recovery of the reservoir.

Q. Enron is also requesting an increase in the depth bracket allowable for wells in the pool?

A. That's correct.

Q. What is the current allowable?

A. The current allowable on 80-acre spacing is 490 barrels per day.

Q. What is it on 40s?

A. 410 barrels per day.

Q. And Enron is requesting 660?

A. That's correct.

Q. Why are you asking for this increase in the depth

bracket allowable?

A. The reason we're asking for that is that the wells initially are massively fracture stimulated, and approximately 2000 barrels of fracture fluid is put into the formation. And from our core studies and all we believe that the quickest cleanup that you can get those liquids back out of the formation, it's best not to allow the fluids to imbibe and possibly damage the reservoir.

And so we do bring the wells back fairly quickly. And they will -- At least for the first month or two, some of them will average up in the 400- to 500-barrel-per-day range. And then they fall off very quickly, as can be seen by the 13 decline curves that are shown here. They're very dramatic declines because of the tight rock.

And so if we have a well for one or two months on a -- the second well on an 80-acre spacing unit could be in the 400- to 500-barrel-a-day range offsetting one of the current producers, say, at -- some of those are between 150 and 200 barrels per day, then that would be in that range of 660, and that was our reasoning.

Q. You're anticipating in fact that the 660 depth bracket allowable will probably only be utilized during a short period of time during the first few months of the life of an infill or a new well on the --

A. That's correct.

Q. If this allowable is approved, do you see any potential for damaging the reservoir?

A. No, I do not.

Q. Are there adequate facilities to transport and market any of the oil that would be produced as a result of the higher depth bracket allowable?

A. Yes.

Q. Would the same be true of the casinghead gas that would be produced?

A. Yes.

Q. How much water are you producing out here at this time, Mr. Cate?

A. Approximately 300 to 400 barrels of water per day.

Q. With the increase in the depth bracket allowable, would you anticipate any problem with producing water or disposal of that water?

A. No, there would be no problems. We have a disposal well in the area that is operated by Enron and does take this water.

Q. In your opinion, will approval of this Application be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it would.

Q. Was Exhibit 6 prepared by you?

A. Yes, it was.

MR. CARR: At this time, Mr. Stogner, we would move the admission into evidence of Enron Exhibit 6.

EXAMINER STOGNER: Enron Exhibit 6 will be admitted into evidence at this time.

MR. CARR: And that concludes my direct examination of Mr. Cate.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Cate, was 80 acres the appropriate spacing for this unit in the beginning?

A. I believe so. When we initially came in, the high rates that we were seeing led us to believe that the possibility existed that 40 acres, at least in all cases, may be too tight of a spacing.

And I think from the evidence here we're seeing that some of those spacing units will not need an additional well. They will, in fact, drain 80 acres. So it did prevent the possibility of overdrilling in those cases.

However, now, with a little more time and production data, we're seeing that just certain areas in the field will benefit from a change in the pool rules.

Q. What is Enron's long-range -- short-range, for

that matter -- plans for the pool?

Because if I remember right, there are no present 80-acre proration units that have more than one well; is that correct?

A. That's correct.

Q. What kind of an infill program does Enron plan with this?

A. Well, we would start off very slowly. We will probably pick -- and I would assume it will be into next year before we do anything like this -- we would pick one or two of the areas we believe have the least amount of oil probably pulled from the 80-acre unit and, in addition to that, do some diagnostics.

So we would start very slowly and possibly drill a well, do bottomhole pressure buildup analyses to see if we're correct, and then proceed from there.

But it would not be -- It would not be several rigs at a time. It would probably be one rig and one well at a time, and collecting data as we go.

Q. Where did the 660 barrels come from?

A. 660 was -- Again, it's calculated based on some of the units that we could anticipate drilling have one well now, say if it's producing 170 barrels of oil per day in its current decline, and the second well on the 40 acres, some of them have been shown to be -- the initial

wells have been shown to be capable of producing the 490 barrels per day for one or two months while we clean them up.

And so if you add the 170 barrels of the current producer with the anticipated 490 that the second well would temporarily need, that equals the 660.

Q. You said that each well has had a massive fracture job?

A. A massive fracture, what I would consider a massive. It's a large sand hydraulically fractured job, yes.

Q. And each one of the wells completed out there has had this?

A. Yes, every one of them requires it.

Q. Same as your infill wells, I assume?

A. Yes, I would anticipate each one will be fracture-treated.

EXAMINER STOGNER: I have no other questions of this witness. You may be excused.

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

EXAMINER STOGNER: Does anybody else have anything else further in Case Number 11,375?

Before I take this case under advisement, Mr. Carr, would you please provide me a rough draft order --

MR. CARR: Yes, sir, I will.

EXAMINER STOGNER: -- of the proposed rule changes -- or amendments, I should say?

This case will be taken under advisement.

(Thereupon, these proceedings were concluded at 10:50 a.m.)

* * *

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL October 13th, 1995.

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 No. 11375, heard by me on 5 October 1995.

, Examiner
Oil Conservation Division