NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

CASE NO. 10796

IN THE MATTER OF:

The Application of Manzano Oil Corporation for an Unorthodox Gas Well Location, Lea County, New Mexico.

VOLUME I

BEFORE:

DAVID R. CATANACH

Hearing Examiner

State Land Office Building

Thursday, August 19, 1993

REPORTED BY:

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Certified Court Reporter
for the State of New Mexico

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EXAMINER CATANACH: We'll call the hearing back to order for Docket #23-93.

At this time I'll call Case 10796. Application of Manzano Oil Corporation for an unorthodox gas well location, Lea County, New Mexico.

Are there appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm, Campbell, Carr, berge & Sheridan. I represent Manzano Oil Corporation in this case, and I have two witnesses.

EXAMINER CATANACH: Additional appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin & Kellahin, appearing in opposition to the Applicant. I represent Marathon Oil Company in association with Mr. Dow Campbell.

I have potentially three witnesses, and I would like all my witnesses to be sworn.

EXAMINER CATANACH: Can I get all the witnesses to stand and be sworn in at this time.

[The witnesses were duly sworn.]

MR. CARR: At this time, Mr. Catanach,

we would call Mr. Mike Brown.

CHARLES MICHAEL BROWN

Having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

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

A. Charles Michael Brown.

Q. Where do you reside?

A. I reside in Roswell, New Mexico.

Q. By whom are you employed?

A. By Manzano Oil Corporation.

Q. What is your current position with Manzano?

A. Geologist.

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

A. No, I have not.

Q. Could you summarize your educational background and work experience for Mr. Catanach.

A. Okay. I have a bachelor of science degree in geology from Baylor University, 1981. I have a master's geology from the University of Oklahoma, 1983. I have a master's in business

administration and finance from the University of Texas at Dallas, 1989.

I have 10 years' worth of experience. I've worked for Exxon Corporation, Prectin Company, USA, in Andrews, Texas. I worked for Texas Oil & Gas in Shreeveport, Louisiana, and for the last two and a half years I've worked for Manzano Oil Corporation.

Q. In your various jobs with Exxon, Texas Oil & Gas, and Manzano, have you, at all times, been employed as a petroleum geologist?

A. Yes, I have.

Q. Are you familiar with the application filed in this case on behalf of Manzano Oil Corporation?

A. Yes, I am.

Q. Are you familiar with the Manzano Oil Corporation Neuhaus Federal #2 well?

A. Yes, I have.

Q. Have you made a geological study of the area surrounding this well and the Lea Wolfcamp pool?

A. Yes, I have.

MR. KELLAHIN: I would tender Mr. Brown as an expert witness in petroleum geology.

EXAMINER CATANACH: Mr. Brown is so qualified.

Q. Would you briefly state what Manzano Oil Corporation seeks with this application?

A. Manzano Oil Corporation seeks approval of an unorthodox gas well location for its Neuhaus Federal Well #2, located 660 feet from the north line and 1,650 feet from the east line of section 14, Township 20 South, Range 35 East, for all formations developed on 320-acre spacing.

Q. What is the formation in which the well is now completed?

A. It is the Middle Wolfcamp pay interval. The well has been drilled, and it is currently within the Lea Wolfcamp pool.

Q. I think initially, Mr. Brown, it would be helpful if you could provide the Examiner with a brief history of the well.

A. The Manzano Neuhaus Federal #2 was proposed as a Strawn well at a standard well location. The well was spud on June 3, 1993.

Manzano drilled 64 feet of the Middle Wolfcamp pay before we ran a drill stem test. The drill stem test indicated an excellent reservoir, but this reservoir had been partially

drained.

We resumed drilling after the DST and drilled another 67 feet of Wolfcamp pay, and then continued on for another 102 feet. The determination was made at that time to cease drilling, for the following reasons:

The DST indicated that the bottom hole pressure of the Middle Wolfcamp pay interval in the Neuhaus well was 2,129 pounds, which is considerably less than the original reservoir bottom hole pressure.

The hydrostatic pressure in the wellbore was 5,467 pounds, which meant that the borehole was overbalanced by 3,300 pounds. The DST indicated the reservoir had high permeability and that it had already undergone significant skin damage.

During the drilling after the DST, the well began to take fluid and we were running up to 10 barrels of drilling fluid an hour. Given that the wellbore was severely overbalanced, yet you had high permeability and we had already undergone skin damage, and also that it was several days drilling to the Strawn, we were highly concerned about damaging the reservoir

beyond recovery.

In addition, we determined it would not have been prudent to produce the Strawn while Marathon was draining the Wolfcamp reservoir under Manzano's lease.

Manzano sought a temporary allowable while obtaining approval of the well location. Mr. LeMay approved an emergency allowable equal to one-third of the well's absolute open flow.

On the initial test, the well's actual open flow was 2.8 million per day. The Hobbs District Office authorized 6,000 barrels per month temporary allowable. Recent test shows that the well has absolute open flow potential of 35 million cubic feet of gas per day.

Q. Let's go to what has been marked as Manzano Exhibit No. 1. Would you identify this exhibit and then review it for Mr. Catanach.

A. Okay. Exhibit 1 shows a structure map on top of the Wolfcamp formation. It is drawn on 25-foot contour intervals. What is shown as well is the Marathon Jordan "B" #1 well, located in the southeast quarter of Section 11, and the Manzano Neuhaus Federal Well #2 located in the northeast quarter of section 14. Both wells are

noted to be 660 feet from the common lease line.

You'll also note that I've put the east half spacing in section 14, and later we'll see, on structure, we're 20-feet high on this Wolfcamp horizon. On the top of the Wolfcamp pay, we're a little over 60 feet high.

Q. Now, Mr. Brown, what are the well location requirements in this pool?

A. 660 feet from the side boundary and 1980 feet from the end boundary.

Q. So, our well is 660 from the end boundary and, therefore, closer than permitted by the rules?

A. That is correct.

Q. How close to the common lease line between your tract and the Marathon tract is the Marathon well?

A. Both the Manzano well and the Marathon well are 660 feet from the common lease line.

Q. Using Manzano Oil Corporation's Exhibit No. 1, would you review for the Examiner the ownership in the area immediately affected by this location?

A. The south half of Section 11 is controlled by Marathon.

Q. That's dedicated to the Marathon Jordan "B" #1?

A. That is correct.

Q. What about the south half of 12?

A. The south half of 12 belongs to Manzano Oil. All of section 13 is controlled by Manzano Oil.

Q. What about the northwest quarter of 14?

A. That is controlled by Mitchell Energy.

Q. If Manzano would have been able to dedicate a lay-down unit in the north half of 14, the Neuhaus well would have been a standard setback as to the Marathon tract to the north, would it not?

A. That's correct.

Q. Why did you not develop this with a lay-down north half unit.

A. Many attempts were made to get Mitchell Energy to join on the drilling of the well, to sell the property, to farm out. After months of trying, eventually they said they were not interested in any kind of deal.

Q. And that was before the well was drilled?

A. That was before the well was drilled.

Q. Based on what you know now, is the northwest quarter of 14 productive in the Middle Wolfcamp?

A. No, it is not.

Q. What about the southeast quarter of section 14?

A. It is not productive as well.

Q. All right. Let's go now to your Exhibit No. 2, the cross-section. If you could identify that for Mr. Catanach and then, I think first it would be helpful, Mr. Brown, if you would identify the colors shown on this cross-section, and then review the information on it?

A. What I've put together here is a structural cross-section that goes between the Manzano Neuhaus Federal 14 #2, to the right, and what was the TXO #1 Jordan "D," which is now the Marathon Jordan "B" #1.

This is a structural cross-section datum of minus 7650. What I've shown as the top of the Wolfcamp is your first line down. I picked the top of the Middle Wolfcamp pay interval, and have picked the base of the Middle Wolfcamp pay interval.

The first thing you notice structurally, top of the Wolfcamp, Manzano is about 20-feet high. But on the Middle Wolfcamp pay interval, the whole section thickens tremendously, and we're about 60-feet high on it.

On the gamma ray tracks of both wells, I've noted--

Q. What color are those?

A. I've noted the clean dolomite in purple. That is less than 30 API. Greater than that is colored brown. That which is limestone, or predominantly limestone, is colored blue.

On the gamma ray track, what's readily noticeable is that the Manzano well has a greatly thickened section. It's 131 feet thick. The Marathon well is only 63 feet, total thickness. Looking at just the clean dolomite, the Manzano well has 126 feet of clean, dolomite pay. As you move north on to the Marathon section, it becomes much more ratty. There's far less clean dolomite. In fact, they have only 40 feet of pay, of clean dolomite.

Looking at the porosity track, what I have done, I've colored neutron porosity greater

than four percent is colored orange, greater than four percent density porosity is colored yellow, the true porosity would be a cross-plot of the two, and would be done on a Dressler-Atlas chart book.

Just looking at the visual between the two wells, it's quite easy to notice that the Manzano well has a tremendous amount of porosity, as compared to the Marathon well. Especially looking at the amount of density porosity greater than four percent,.

The Marathon well has just a few spikes greater, and some of those are probably washouts. The Manzano well has considerable thickness.

Using a bunch of different porosity parameters, cross-plot porosity parameters, I've examined the two wells. The first thing I've looked at was porosity greater than four percent and gamma ray less than 30. And that would, essentially, be just the clean dolomite.

There the Manzano well has 115 feet of pay, while the Marathon well has only 39. If you take off the clean dolomite constraint and just say any porosity greater than four, then that is

the best thing I can give to the Marathon well, would be the porosity is 119 feet of pay in the Manzano well, while you only have 62 feet in the Marathon well.

Also, I looked at all the porosity ranges. If you look at, for example, 10 percent porosity, the stuff greater than 10 percent porosity, the Manzanc well has 43 feet, while the Marathon well has only 11, so four times the pay.

Greater than 15 percent, Manzano has 21 feet, while Marathon only has four, so five times. As you move onto other different cutoffs, you get the same conclusions.

Looking at porosity feet, the Manzano well had 11.6 porosity feet, while Marathon has only 5.3. Looking at hydrocarbon porosity feet, with a RW of .032--and I used a bunch of different scenarios on that--the answers were the same every time. Hydrocarbon porosity feet was 10.3 in the Manzano well, and 4.6 in the Marathon well.

Just looking at this exhibit alone, it's easy to see that there is at least twice the pay and possibly more in the Manzano well.

As you move from the Manzano well, which appears to be a very thick carbonate build-up, very clean dolomite, highly porous, as you move to the north, towards Marathon, you begin to lose the reservoir and, by the time you get there, you have less than half. And probably just a little bit north of that, you probably have none at all.

The last thing, the track, I put the resistivity log and shaded where you have the shallow reading, MSFL, and the deep reading lateral log. I just shaded that different. That indicates permeability.

You can see that both wells show, where they have pay, show that separation.

Q. Mr. Brown, in your opinion, when you encountered the Wolfcamp in the Neuhaus #2, did you hit the top of the structure?

A. At this point you really don't know, but the fact remains that it is possible it is thicker, and if it would be thicker, it most likely would be on Manzano's track. What we have here was over twice as thick as what Marathon has.

Q. Could you identify what has been marked

as Manzano Exhibit No. 3?

A. Surely. Exhibit No. 3 is an exhibit that was prepared by Marathon for a compulsory pooling hearing that was going to be proposed for the Selby #1 in the south half of Section 1.

Q. Why have you included it with your exhibit material?

A. I included it for--the main reason is to look at what Marathon thought the pay was in the Jordan "B" 1. They used a four percent cutoff; they also called it net dolomite porosity. If you look at it, it's 39 feet, which corresponds incredibly well with the amount of clean dolomite you saw, the purple noted on their log on the cross-section.

Q. Let's go on now to Manzano Exhibit No. 4. Would you identify and review that?

A. Exhibit No. 4 is an isopach map. I have the wrong one here. It's the Middle Wolfcamp pay interval.

Q. Do you have a copy of it?

A. No, I do not.

Q. I'm the guilty party. I assembled the exhibits. All right. Let's go to Exhibit 4.

A. As I said, that is the Middle Wolfcamp

pay interval isopach map, porosity greater than four percent, and a gamma ray of less than 30 API, which is, essentially, all that porosity, the clean dolomite in purple, is greater than four percent.

It roughly corresponds to what we saw in Exhibit 3. Using this parameter, the Marathon Jordan "B" 1 has 39 feet of pay, the Manzano Neuhaus has 115 feet.

In mapping, with the two points of control as you have, plus the constraint of what we know the estimated ultimate recovery of the reservoir, the size of this feature is very small. There's very little way of changing your contours to dramatically affect this.

If you go larger than this, you'll exceed what the estimated ultimate recovery of the reservoir seem to be. So, what we have is a very small feature. It is very comparable to the feature we see to the south. There's a number of wells in BT. The BTA, by our well, is in--is very typical of the Wolfcamp; very small, localized, pod features.

Also what this shows is that the Jordan "B" #2 is not in the reservoir. If you look,

you look at the log itself, it does not look the same. It's more limestone, very little dolomite, and I guess, as we'll have in engineering evidence, it has already been produced and depleted. Basically, we feel it's in a separate reservoir.

Q. Let's move to Manzano Exhibit 5, an isopach of the Middle Wolfcamp net porosity. Do you have that exhibit?

A. Yes, I do.

Q. Could you identify that and review it for the Examiner?

A. This is an isopach map on the middle Wolfcamp pay interval, using a net porosity cutoff of four percent. Basically, I'm including porosity in this exhibit that is not clean dolomite, and it is the most generous case that I can give to Marathon.

This shows 119 feet of pay in the Neuhaus well, 62 feet in the Jordan "B" 1. It's very easy to note that the majority of the reservoir is on Manzano's side, in the northeast quarter of section 14.

Q. Have you been able to determine the net acre-feet in the reservoir?

A. Yes, I have. We have it as 10,072, based on this map.

Q. And that's acre-feet?

A. That's acre-feet.

Q. Porosity greater than four percent?

A. Porosity greater than four percent, yes.

Q. Are you ready to go to Exhibit 6?

A. I am.

Q. All right. Would you identify that for Mr. Catanach and review that, please.

A. This exhibit shows is an isopach map of the Middle Wolfcamp pay interval using net porosity feet, no cutoffs. What it shows is, there's 11.6 porosity feet in the Neuhaus Federal #2, while there's only 5.3 in the Jordan "B" #1.

Once again, the majority of the reservoir is contained in the northeast quarter of section 14. There is some pay, of course, on the southeast quarter of 11. No other quarter section would have pay in them.

Q. Mr. Brown, let's now go to the middle Wolfcamp pay interval isopach that shows net hydrocarbon porosity feet, Exhibit No. 7. Would you review the information on that exhibit for

the Examiner, please.

A. What I did was use a water saturation calculation of--RW of .032. As I said before, I used numerous other sensitivities, changing it around. It did not change the story significantly. Most of the time it was in Manzano's favor.

What I have here is, the Manzano well shows 10.3 hydrocarbon porosity feet, while the Marathon Jordan "B" #1 shows 4.6. Once again, as we said, the majority of the reservoir lies in the northeast quarter of Section 14.

Q. Basically, can you summarize the conclusions you've reached from your geologic study of this area?

A. The Lea Wolfcamp field is typical of the Wolfcamp in this area, in that it is very small and localized. It consists of a very thick build-up of carbonate that flanks off very quickly, so a very, very, very, very small pool.

The majority of the reservoir, using any criteria that I could consider using, is found under the east half of section 14. Only a small portion of the reservoir is located in the south half of Section 11.

It appears that the Neuhaus Federal #2 is situated near the crest of a very thick carbonate build-up that covers the northeast quarter of Section 14, while the Marathon Jordan "B" 1 is situated on the north flank of this build-up in an extreme flank position.

Q. Is Exhibit No. 8 a copy of an affidavit simply confirming that notice of this hearing has been provided to Marathon as required by OCD rules?

A. Yes, it is.

Q. Will Manzano also call an engineering witness to review the drainage aspects of this case?

A. Yes, they will.

Q. Were Exhibits 1 through 8 either prepared or compiled by you?

A. All but Exhibit 3 was prepared by me. Exhibit 3 was prepared by Marathon.

Q. You have used that Exhibit 3 simply to confirm--

A. --the cutoff criteria that Marathon was using prior to the drilling of this well.

MR. CARR: Mr. Catanach, at this time we move the admission of Manzano Exhibits 1

through 8.

EXAMINER CATANACH: Exhibits 1 through 8 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mike Brown.

EXAMINATION

BY MR. KELLAHIN:

Q. If I remember correctly, Mr. Brown, the Manzano acreages, during the relevant period of time, consists of the south half of 12, all of 13, and the east half of 14?

A. That is correct.

Q. Looking in Section 12, the gas well symbol identifies what well? What's the name of that well?

A. That is the LL State #1.

Q. That's the Amoco well?

A. The Amoco well, yes.

Q. The well that's spotted in the southwest corner of 12, that's the Simms State #1 well drilled by Manzano?

A. That is correct.

Q. And in 13, then, what is that well?

A. The producer is the Manzano Amoco State #1.

Q. Okay. And then the dry hole symbol?
A. There are two wells there drilled together. One is the Southern Union and one is the Trainer #1.
Q. Are either of those wells deep enough to have penetrated the top of the Wolfcamp?
A. No, they're not.
Q. The wells for potential control in mapping the Wolfcamp would be both wells in Section 11?
A. Right.
Q. The three wells in 14?
A. Right.
Q. And then--I guess that's all. In 12, that gas well is deep enough to be a control point, is it not?
A. That is correct.
Q. The Amoco State LL #1?
A. Right. The only two wells that are in the reservoir, the other are zero points of control.
Q. All right. Of those penetrations, the two wells in 11 have produced gas out of this Middle Wolfcamp interval, right?
A. That is correct.

Q. And only your Neuhaus Federal #2 and #14 has produced gas out of the Middle Wolfcamp?

A. That is correct.

Q. All right. What, in your opinion, is the probability of finding Strawn formation to be productive in any of these four sections?

A. I feel that the Strawn has been overlooked. The Strawn was shown to be productive in Section 12, the LL State. It was tested as an oil producer, they plugged back and went to formation. They did test it, and it was productive.

Q. What was the productive range, in barrels of oil in that Amoco well?

A. What they did, they simply perforated and acidized. It was flowing at a rate of 10 barrels a day. The well was not frac'd.

Q. Then what did they do?

A. They just went on.

Q. On where?

A. I'm not sure. I'm sorry.

Q. During the first part of this year, this Manzano well, the Neuhaus Federal "2" was being planned in 93, is that right?

A. This well, I remember when it came to

us, this well was first proposed by, M. Brad Bennett. It was brought to us, and it would have been earlier this year.

Q. During this period of time, did you prepare any Strawn maps of any kind?

A. Yes, I did. I looked at--I thought I saw potential pay in the Jordan "B" #1, both in the interval that was tested and the LL State.

Also, if you look at the upper part of the Strawn, you'll notice there's quite a bit of separation between the MSFL and the deep reading. Basically, in the Strawn, you look for fracture or permeability indications. Strawn is a very difficult reservoir to play. It appeared to me that the Jordan "B" #1 was potentially on the flank of a feature. It looked very similar to what it looks like in the Wolfcamp.

I was hoping to find, and I still believe there is a Strawn feature somewhere in an updip position.

Q. How far do you have to go away from this immediate area to find the closest Strawn oil production on 40 acres?

A. The Strawn is protective in the Wilson. It's production in a few areas around.

It has, I think, been overlooked because it appears to be a little more ratty. Strawn is a very difficult formation to play. It's very similar to Delaware. It's just now becoming hot. I think the Strawn in time will become a potential horizon here as well.

Q. In looking at a potential target for a Strawn oil well, and looking at your acreage in the east half of 14, what caused you to place the well 660 by--what is the other dimension? 1650?

A. 1650.

Q. 1650 in Section 14, as opposed to some other location within that half-section?

A. I felt this was a, for Strawn, I wanted to stay fairly close to the Jordan "B" #1 on the Strawn interval. I feel like there is potential pay in their well. They have not tested it to date. I think they should.

I wanted to move slightly updip and hopefully prove that the build-up would be in a south direction as opposed to, say, a northeast direction. It was also a very good location for the Bone Spring, the Yates, the Seven Rivers.

There is a Second Bone Springs sand that goes through this area, and, of course, the

Wolfcamp.

Q. The Wolfcamp was the primary target, was it not?

A. It was one of the formations we were looking at. This is a multi-pay area.

Q. You were keying off the Jordan "B" #1 well, were you not?

A. Sure was.

Q. At the time you were planning the Neuhaus Federal 14 #2 well, the only formation of those zones you've mentioned that was being produced by the Jordan well was the Wolfcamp zone?

A. They had produced the Morrow as well.

Q. Currently producing, though, was the Wolfcamp zone?

A. That is true.

Q. And you had knowledge that that gas well was producing at rates in excess of four million a day, did you not?

A. I sure did.

Q. When you look at Exhibit 6, the net porosity feet map that you presented--

A. Yes, sir.

Q. --can you approximate for me where

you'll be on this isopach map in the east half of 14, if your well had been located 1980 from the end line--and you pick the lateral, any east/west dimension you want--but keep 1980 back from the end line of the north side, where would that put you?

A. Well, first location, if you went off 1980 off the east, 1980 off the north, you probably would not have any pay at all.

Q. The other option for a standard location?

A. Also would be seriously in doubt whether you would have pay.

Q. When you're looking for a Strawn oil prospect in this area, was there any information from any of these wells we've described that would give you details on the Strawn?

A. I didn't--

Q. Did you have log data from any of these?

A. Yes, I did. I had logs on all the wells.

Q. Did you have any mud logs that would show you anything about the Strawn?

A. No, I did not. I was not able to get

them.

Q. The Simms State #1 well that Manzano drilled in 1993, is 660 off that boundary from the Jordan "B" 1 spacing unit, isn't it?

A. That is correct.

Q. It's the well in the southwest quarter of 12?

A. That is correct.

Q. That well was drilled in what, March was it, of this year? March or April?

A. Sometime in that time period. It was prior to the drilling of the Neuhaus Federal #2.

Q. All right. And the Simms State 1 was also permitted at the OCD as a Strawn oil well to go to the deeper zone below the Wolfcamp?

A. That is correct.

Q. When that well was drilled, it was drilled only to the Wolfcamp, wasn't it?

A. That is correct, when we penetrated the Wolfcamp, we were 125 feet high to the Marathon Jordan "B" 1. At that point, we knew we were going to be high and dry in the Strawn.

Our original maps had us 40--we wanted to stay with 125 and 50 feet and not exceed that as far as high, and we basically had had no shows

since the San Andres, and very low probability of finding our projected Strawn high in that location.

Q. Based upon that interpretation of the data, where was your next best location, then, for attempting a Strawn oil well?

A. Would be to move south, south of the Jordan "B" #1.

Q. What consideration did it play in the decision made by Manzano to drill the Neuhaus Federal 2 well at its location? What significance did it play that you had a producing Wolfcamp well just north of that location?

A. As I said, it's a multi-pay area. You have to stack them. And Wolfcamp was a target. As small as the Wolfcamp is, with one point of control, the high easily could have been to the northeast. You had one point of control, and you're trying to decide which direction the porosity build-up is going to be, there's infinite number of ways you can draw that reservoir.

Q. And i assume, in order to reduce the risk and minimize the uncertainty of obtaining production, the closer you get to the established

Wolfcamp producing the well, the lesser the risk?

A. We wanted to be the exact distance off the lease line that Marathon was.

Q. Exhibit 6, and I think, correct me if I'm wrong, the interpretation or the character of the size and shape of the reservoir in the Wolfcamp, is predicated on some decisions made by you, and I assume your engineer, concerning the Marathon Jordan "B" #2 well?

A. That is correct.

Q. When you look at the geologic data, are you looking at a continuity of reservoir between the Jordan "B" 2 and the Jordan "B" 1?

A. No, I am not. All of the Wolfcamp pays along this trend produce from the Middle Wolfcamp pay interval. They're all very small reservoirs

Q. That was my question, maybe I didn't phrase it right as a layman. If I were to map the gross Wolfcamp, this middle zone, you would pull in the Jordan "B" 2, would you not?

A. Not if you're a good geologist. You cannot map, as a reservoir, something that's outside.

Q. Tell me the criteria that caused you to select putting that well outside of the reservoir

that's containing the Jordan "B" 1?

A. One, while it is in the same interval, as I said, all the wells in here that produce, produce from the same interval. They're not the same reservoir. That, we know.

Q. How do you know that as a geologist?

A. I know that as a geologist because there's wells between these pods that are zero points of control.

Q. Show me the well between the Jordan "B" 1 and the Jordan "B" 2 that is a geologic control point for you.

A. I do not have that here. What I do have is that that Well #2 has been perforated, it was depleted. If it's in the same reservoir, then, it is not productive any longer. But, if you were to draw up to there you would exceed the estimated ultimate recovery for the reservoir. You cannot draw this larger than what the data tells you that it can be. It must be very small.

Q. Let me make sure I understand. You have made the size and shape based upon some engineering calculations and judgments about the volume of gas within that container?

A. No. I drew it as it was because of the

way the Wolfcamp is in this area; small, localized pods, very small in size. I'm constrained by that. I have only two physical points of control within the reservoir. I had to honor them.

I also have to honor the size of the reservoir. I can't draw something twice as large as what the reservoir we know is, based on protection information. So, this represents all the data we have to date. The main thing I worked off of were the two physical points of control from two wells.

Q. Help me understand, then, the shape. If we've got a control point, for example, in the northwest quarter of 13, that is a well deep enough to give us Wolfcamp data?

A. No, it is not deep enough to give Wolfcamp information.

Q. Let's look at the west half of 14. Is that control point deep enough?

A. Yes, it is.

Q. Did you have any gross Wolfcamp interval in that well?

A. I did not have any middle Wolfcamp pay dolomite, productive dolomite in that well.

Q. Without going all the way around the isopach, let me draw your attention to this. When you look at the Manzano Neuhaus Federal #2 well and look to the southwest and pick up, I think that's the Amoco Federal AG Com 1 Well in the west half of 14?

A. Yes.

Q. Those are your two control points as a geologist?

A. As a geologist, it is.

Q. You have to decide where, between those two points, you're going to place the contour lines and ultimately decide where the zero line goes?

A. That is correct.

Q. The placement of that line is going to be influenced or modified by the calculations the engineer gives you, to tell you how much gas he thinks are within the containment?

A. It is to some point, yes.

Q. You had access to some of Marathon's geologic data when you located the Simms State 1 and the Neuhaus Federal 2, did you not?

A. Yes, I did.

Q. Did you also have available to you what

you've marked as your Exhibit No. 3, which was one of their maps of this net dolomite porosity?

A. I'm trying to remember what the timing was on that. The prospect we already had together before, at least on the Simms. This map came after the prospect was put together.

Q. Were there any other geologists involved in this project for either the Simms well or the Neuhaus well, other than you, Mr. Brown?

A. Simms well was only me. I received some geologic maps from M. Brad Bennett. I'm not sure which geologist drew them. I don't think he did. But, basically, I wasn't using those maps.

Q. So the work you presented today is your own personal work?

A. Is my own personal work.

Q. Will you look at the cross-section that you've introduced, Exhibit No. 2. I want to have you help me understand, as a layman, how some of the contours are determined, the thicknesses.

If you'll take the cross-section, Exhibit No. 2, and your Exhibit 5, which is the net porosity is greater than four percent, just so I can see your method, help me understand on

Exhibit 5, then, when you're looking at this net thickness with the four percent porosity cutoff, and looking at your log on the cross-section, what are you mapping?

A. What I am mapping, the Exhibit 5, I went in on a foot-by-foot basis and picked the density porosity and the neutron porosity, went in through the Dressler chart books with the appropriate tool series used, and cross-plotted them and generated a cross-plot porosity.

We have a cross-plot porosity line noted on Manzano's well. There was no cross-plot porosity noted on the Jordan "B" #1.

Q. Just to keep it simple for me, if I look at your cross-section, are you mapping the interval that's shaded in your well from the top of the orange to the base of the orange?

A. From, right, the top of the middle Wolfcamp pay interval that's noted.

Q. When we go over to the Marathon well, we're looking at the similar coloring on their log?

A. Yes, we are.

Q. The perforations in your well do not perforate that entire net porosity footage

interval. That total footage interval is, what, 119 feet in your well?

A. Yes, it is.

Q. Do you have an explanation as to why that total interval was not perforated?

A. This is a high permeability reservoir with what appears to be a very high vertical permeability component. It was unnecessary to do so.

Q. What was the criteria utilized by Manzano in selecting where the perforations went in your well?

A. I did not personally pick these porosity points, though. If you'll ask the engineering witness, I just had input from the geological standpoint.

Q. When we look at Exhibit 6, which is the net porosity feet map and compare it to the cross-section, help me understand what interval gets mapped here.

A. What gets mapped here is, you basically do not impose a porosity cutoff on the reservoir. You simply take the cross-plot porosity, say if it's 10 percent, .1. One foot of 10-percent porosity would be .1 porosity

feet.

You do that for a foot-by-foot basis and add it up. Basically, what it is doing, it takes out any effect of porosity cutoffs. It is probably one of the most widely used methods, when you go into a unitization hearing, et cetera, of trying to determine the reservoir.

Q. When we look at Exhibit 6, there would then not be any standard location in the east half of 14 that would have placed you in a productive position in the Middle Wolfcamp reservoir?

A. That is correct.

MR. KELLAHIN: No further questions. Thank you.

EXAMINER CATANACH: Anything else, Mr. Carr?

MR. CARR: Nothing on redirect.

EXAMINER CATANACH: Just a couple of questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Brown, you testified a little bit as to the negotiations between Mitchell. Were you a party to those?

A. No, those were done through M. Brad Bennett, prior to him showing us the deal.

Q. To your knowledge, was any consideration ever given to force pooling the Mitchell acreage?

A. That, I do not know.

MR. STOVALL: Who does know?

THE WITNESS: Brad Bennett with M. Brad Bennett, I'm sure, would know.

Q. I believe you testified that you calculated 10,072 acre-feet in the reservoir?

A. Yes, sir.

Q. Have you broken that down as to what portion of that is in your acreage and what portion is in--

A. That will be covered with our engineering witness.

Q. Okay. Am I correct in understanding your testimony, that in a standard location, the well would not be productive?

A. It would have been a very high-risk well if you were looking for Wolfcamp, probably.

Q. It would have been--

A. It probably would have been nonproductive.

Q. In your opinion, how many feet would you need of net porosity greater than four percent to make a well?

A. It's really hard for me to say. To compete competitively, you would want at least, I would say, close to what Marathon has.

EXAMINER CATANACH: I have nothing further:

MR. STOVALL: I have a couple of questions.

EXAMINATION

BY MR. STOVALL:

Q. When you say "to compete," what do you mean?

A. I was--just to have a reservoir, period, I don't know how many feet it would take. One foot, I don't think you could make a productive well. I don't know. Maybe, to actually compete--

Q. Well, that was your term. I want to know how you used it?

A. That was probably a poor use of the term. I don't think we could make a well, period.

Q. Okay, to recover the gas under your

acreage?

A. You definitely could not recover the gas under our acreage if you had a small amount of pay, but to make an economic well, period, I'm not sure what you would have, but it would probably be at least 10 percent, or five, 10 feet, possibly.

Q. Who filed the application for permit to drill with the BLM for this well? Which company?

UNIDENTIFIED SPEAKER: Manzano did.

A. Manzano.

Q. That's not your answer, is it? That's somebody else's answer?

A. Right.

MR. STOVALL: Okay. Nothing further.

EXAMINER CATANACH: The witness may be excused.

[A recess was taken.]

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, 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 caused my notes to be transcribed under my personal supervision; 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 August 25, 1993.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ, RPR
CCR No. 4

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 10,796

EXAMINER HEARING

IN THE MATTER OF:

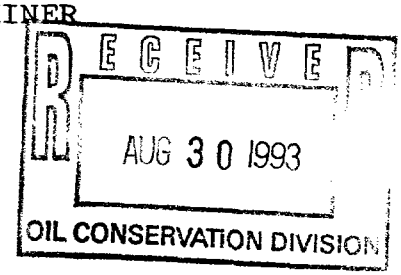
Application of Manzano Oil Corporation for an unorthodox gas well location, Lea County, New Mexico

ORIGINAL

TRANSCRIPT OF PROCEEDINGS

Volume II

BEFORE: DAVID R. CATANACH, EXAMINER



STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

August 19, 1993

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* * *

WHEREUPON, the following proceedings were had at 2:10 p.m.:

MR. CARR: At this time we would call Mr. Donnie Brown.

(Off the record)

DONNIE BROWN,

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

DIRECT EXAMINATION

BY MR. CARR:

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

A. Yes, my name is Donnie Brown.

Q. And where do you reside?

A. In Roswell, New Mexico.

Q. By whom are you employed?

A. Manzano Oil Corporation.

Q. What is your current position with Manzano?

A. I'm a petroleum engineer.

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

A. Yes, I have.

Q. And at the time of that prior testimony, were your credentials as a petroleum 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 Manzano?

A. Yes, I am.

Q. Have you made an engineering study of the effect of the Manzano Neuhaus Federal Number 2 well on the offsetting Marathon tract?

A. Yes, I have.

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

EXAMINER CATANACH: They are.

Q. (By Mr. Carr) Mr. Brown, would you identify what has been marked Manzano Exhibit Number 9 and review it for Mr. Catanach?

A. Yes. Exhibit Number 9 is the bottomhole pressure over Z versus cumulative production of the Lea (Wolfcamp) Field, which is presently being produced by two wells, the Marathon Jordan "B" 1 and the Manzano Neuhaus Federal Number 2.

The point at P over Z equals 4147 at zero cumulative production represents the point at the original pressure when the Jordan "B" 1 was first recompleted into the Middle Wolfcamp pay in December of 1991.

The second point is a P over Z of 4024 and a

cumulative production of 299,000 MCF, represents the conditions of the reservoir during the time that Marathon conducted a bottomhole pressure buildup test on May the 4th, 1992.

And the third point with the P over Z equals 2581 and a cumulative production of 2,000,465,000 [*sic*] MCF from the reservoir represents the reservoir conditions when the Middle Wolfcamp pay was DST'd in the Manzano Neuhaus Federal Number 2.

Now, when you connect these lines with the best-fit straight line and project this line to the intersection of the X axis, that represents the original oil in place, and that original oil in place is equal to 6.5 BCF or billion cubic feet.

If you'll assume that the abandonment pressure is 500 pounds, we expect ultimate recovery from this -- the Wolfcamp pool of approximately 5.7 billion cubic feet.

Q. Now, behind the curve, could you identify the attached documents?

A. The attachments are simply the reservoir data and gas compositions I used to derive the Z factor and also -- It also fits these points, these data points, with a least-square best-fit, and the computer calculates the initial gas in place and the recovery in

a more precise manner than you can project just by extrapolating on the curve.

Q. All right, Mr. Brown, let's go to Manzano Exhibit Number 10. Would you identify this exhibit and then review the calculation for Mr. Catanach?

A. Yes, Exhibit 10 is the formula for the original gas in place, volumetric formula for the original gas in place, the original reservoir pressure and temperature, expressed in standard MCF per acre-feet.

Now, from data derived from the DST and log analysis, from both the Marathon well and the Neuhaus Federal Number 2, it was determined that the average velocity was 8.7 percent, reservoir temperature was 155 degrees fahrenheit, and the average water saturation was 22 percent.

Employing these into the formula and solving for V_s, the original gas in place was about 650 MCF per acre-feet.

From the previous exhibit, we established that the original gas in place was 6.5 BCF, and if you divide this 6.5 BCF by 650 MCF per acre-feet, we conclude that the reservoir volume is 9,942 acre-feet, and this is in good agreement with the geological interpretations previously presented.

It also confirms the geological interpretation that the Jordan "B" 2 is not in this pool, since in fact you'd have to give it way more acre-feet if you connect the Jordan "B" 2 to the reservoir.

Another production history of the Jordan "B" 2 also -- we would also conclude it's not in this reservoir, since it was produced and depleted before the Jordan "B" 1 was placed on production.

As a matter of fact, it produced for six years, only accumulated 28,000 barrels of oil and about 159,000 MCF of gas, which is less than the Jordan "B" 1 could produce in two months, and is less than probably the Neuhaus will be able to produce in two months.

So obviously, if this was connected to this prolific reservoir, all you'd have to do is turn it on and start producing it, and that's not the case.

Q. Mr. Brown, have you determined how much drainage there would be across the common lease line between the Marathon well and the Manzano well if the wells were permitted to produce at equal or competitive rates?

A. Yes, I have.

Q. And how have you done that?

A. I have reviewed three different scenarios to

determine if there's drainage across lease lines and in what direction.

Q. Would you identify what has been marked as Manzano Exhibit Number 11?

A. Yes, Exhibit Number 11 is the radial flow equation for compressible fluids into a wellbore from a surrounding reservoir, and it is a function of thickness of the reservoir, permeability, k, and viscosity, u, of the flowing fluids, of the average reservoir pressure, and of the pressure drop between the reservoir and the sand face in the wellbore.

It's also a function of the distance of this pressure drop in the reservoir to the wellbore, described as "re".

Now, you can rewrite this equation and solve for the re/rw ratio, as I've done so in line two, and since the Jordan "B" 1 and the Neuhaus are equal distances from the lease line and they're equal distances apart, we can equate: re to the rw ratio of the Jordan is equal to the re to the rw ratio of the Neuhaus.

In other words, if yo assume no flow at the east line, these two ratios or distances are equal. So you can equate the right-hand side of the equation of re/rw as I've done so in line four.

Now, since both wells are producing gas from the same reservoir at equal capacities, both is capable of producing 5 million a day and 500 barrels of condensate, the permeability to viscosity of the Jordan is equal to the permeability to the viscosity of the Neuhaus. And also the average reservoir pressure and pressure drop from the lease line to the Jordan, and the lease line to the Neuhaus are equal.

And production history has demonstrated that both wells have the equal capacity to produce at these rates.

Then the equation in line 4 reduces to the thickness divided by the rate of the Jordan is equal to the thickness divided by the rate of the Neuhaus.

And solving for the rate of the Neuhaus, knowing the previous testimony of the geologist that the thickness of the Neuhaus is 119 feet versus 62 feet for the Jordan -- I think he said that was his most generous allocation of net pay in each well -- you derive the equation that the rate of the Neuhaus is equal to 1.92 the rate of the Jordan, to have a no-flow at the boundary.

So my conclusions from these radial flow calculations is that to prevent flow across the lease line and protect correlative rights, the Manzano

Neuhaus Federal Number 2 would have to produce at a rate almost twice that of the Jordan to drain the tract under the Jordan lease.

Q. All right. That's one of the methods you used to determine where there would be a no-flow --

A. That's correct.

Q. -- boundary in the reservoir.

What is Manzano Exhibit Number 12?

A. Exhibit Number 12, I have polymetered the geologist's interpretation of the size of the reservoir, and I have come up with a total acre-feet of 10,072.

I've also established what I call an isopotential line, as indicated on the exhibit. This is a line where the pressure drop between the reservoir and the Jordan "B" 1 and the Neuhaus Number 2 are exactly the same. That is, it is a line of correlative rights protection in which no flow would occur across the lease line.

I polymetered the acre-feet north of this line, which would be credited to the Jordan "B" 1 and came up with 2154 acre-feet. This represents 21 percent of the total reservoir.

Now, as I've said before, these wells have the capacity to drain this small reservoir effectively

and completely. They also have the capacity to produce competitively at equal rates, as proven by production and open plug, a potential test.

Now, if you assume that each well will produce at equal rates, then each well will have the capacity to produce the remaining reserves in this reservoir, or they will have the capacity to drain half the total reservoir acre-feet, or 5036 acre-feet.

Now, the line represented by the drainage encroachment at equal producing rates, that line represents half of the total. That divides the acre-feet of the reservoir in half. In other words, to the north of that line is 5036 acre-feet, to the south is the same.

So you can see if both wells are to compete on a competitive basis from this point forward, not only would they drain their 2154 acre-feet on the Jordan tract, but they also would encroach on the Manzano tract to the amount of 2882 acre-feet.

Q. Mr. Brown, to be sure I'm clear on this, this approach does not take into account or consider past production; it's from this point forward? That's what you're looking at? Is that right?

A. That's correct.

Q. Now, that's the second approach you've used

to try and establish where there would be a no-flow boundary within the unit and the effects of drainage; is that correct?

A. That's correct.

Q. And what is the third method you've used?

A. The third method, I've simply taken a cross-section of the reservoir as one could argue on the previous exhibit that you could have probably a little more acre-feet to the north than we've indicated, or to the east or to the west.

So I've taken a cross-sectional area.

Q. And is that what is marked as Exhibit 13?

A. Yes Exhibit 13.

Q. Okay.

A. That shows the cross-section of the reservoir between the Jordan "B" 1 on the right, having 62 net pay feet, and the Manzano Federal 14 Number 2 on the left, having 119 feet.

Now, getting away from the argument about where the acre-feet lies, if you assume that the surface areal extent drained by both wells are equal, then what you've got left is the area in the cross-section between the two wells.

And for equal rates of production from the wells, the interference drainage boundary between these

two wells will occur at the drainage area from which each well -- where the reservoir area and volumes are equal. In other words, they will drain towards each other until the area one is equal to area two.

Now, these areas are simply the area of a trapezoid, equating area one to area two and describing the height of this drainage boundary as simply the height minus the 119 feet in the reservoir, minus the slope of the line.

We can equate where this drainage boundary is, and I've determined that that is 575 feet from the Neuhaus well and 785 feet from the Jordan "B" 1.

Knowing that these two wells are equal distance apart and equal distance from the lease line, the Marathon well will encroach some 105 feet south of their -- of our common lease line.

Q. Mr. Brown, in your opinion, is Manzano gaining an advantage on Marathon by reason of this unorthodox location in the Middle Wolfcamp formation?

A. No, they're not.

Q. With the wells at this location, based on what you understand, will Marathon, if the wells are producing at unrestricted or -- rates, still have an advantage on the Manzano well?

A. Yes, Marathon will still have a substantial

advantage on the -- over Manzano.

If both wells produce at an equal rate for the remaining life of the field, they will recover 50 percent of the remaining reserve, which is in excess of their 21 percent of the acre-feet under their tract.

And also, if you consider that they've already recovered 2.5 BCF of the 6.5 in place, now, that's 38 percent of the original oil in place already recovered, plus the remaining -- 50 percent of the remaining reserves, they will recover almost 63 to 65 percent of the original gas in place, with 21 percent of the acre-feet under their tract.

Q. Do you believe the Division should impose a penalty on the Manzano well because of its unorthodox location in the Middle Wolfcamp?

A. No, I do not. It would deny Manzano the opportunity to produce its fair share of the reserves in the Lea (Wolfcamp) Pool.

A penalty would impair Manzano's correlative rights.

And a penalty would further aggravate the drainage now occurring across common lease lines.

Q. If both wells produce, neither are penalized, will the Manzano well continue to drain the Marathon tract?

A. No, it would not.

Q. If this Application is approved and no penalty imposed, will Marathon's well continue to -- will it continue to be able to produce the reserves under its tract?

A. Yes, it will.

Q. In your opinion, is a well on the Manzano tract at this location necessary to offset drainage from the Marathon well to the north?

A. Yes, it is.

Q. In your opinion, will approval of Manzano's Application without penalty on the Neuhaus Federal Number 2 be in the best interest of conservation, the prevention of waste and the protection of the correlative rights of all parties in this pool?

A. Yes, it will.

Q. Were exhibits 9 through 13 prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Catanach, I move the admission of Manzano Exhibits 9 through 13.

EXAMINER CATANACH: Exhibits 9 through 13 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mr. Donnie Brown.

MR. STOVALL: Mr. Carr, before Mr. Kellahin

starts, do you want to get your notice exhibit into the record? I don't think you did with the geologist.

MR. CARR: I believe it was Exhibit Number 8, and it was identified and admitted, I think, with the first.

If not, I would move admission of Exhibit Number 8.

MR. STOVALL: Since we don't have that court reporter here, we can't go back and check, so we'll do it.

EXAMINER CATANACH: Exhibit Number 8 will be admitted into evidence.

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Brown, you were involved on behalf of Manzano Oil Corporation in decisions made on the Manzano Sims State Number 1 well in the southwest of the southwest of Section 12, were you not?

A. Yes, I was.

Q. I show you what I've marked as Marathon Exhibit 1-A. This is a true and correct copy of the Application for Permit to Drill on that Sims State Number 1 well, is it not, Mr. Brown?

A. That's correct.

Q. And if you'll turn to the third page -- I'm

sorry, it could be the C-10- -- the survey plat?

A. Yes, page 2.

Q. Yeah, it's page 2, I have -- It shows your signature on that portion of the permit?

A. Yes, sir.

Q. What is your capacity with Manzano Oil Corporation, Mr. Brown?

A. Petroleum engineer.

Q. And do you serve in any other function for Manzano?

A. Operations.

Q. Are there any other engineers that work for Manzano Oil Corporation?

A. No, there is not.

Q. You're it?

A. I'm it.

Q. Am I correct in reading this permit that the Oil Conservation Division approved the Sims State Number 1 well 660 from the south, 330 from the west line of 12, as a Strawn oil well?

A. That's correct.

Q. And this was approved January 22nd, 1993, yes?

A. Yes.

Q. Let me show you the completion report on that

well, Mr. Brown.

The Application for Permit to Drill showed a proposed depth of 12,100 feet to find the Strawn formation?

A. Yes.

Q. And yet the completion report shows the well was drilled only to 11,532?

A. That's correct.

Q. Is 11,532 deep enough to encounter the Strawn?

A. No, it wasn't.

Q. That would be a depth sufficient enough to test for the Wolfcamp, would it not?

A. I believe the geologist testified that it was drilled to the Wolfcamp, it was running high, they thought the Strawn would be high and pinched out, and that's at what point we abandoned drilling the well.

Q. All right. And that abandonment took place sometime in April of 1993? The report shows it was filed on the 22nd day of April?

A. It says TD -- Date TD Reached under item 11, as February the 24th, 1993.

Q. Okay. Then Manzano moves over and files an Application for Permit to Drill on the Neuhaus 14 Federal 2, which I show you to be Marathon's Exhibit

1-C.

Is this the approved Application for a Permit to Drill on the Neuhaus 14 Federal Number 2 well, Mr. Brown?

A. Yes, it is.

Q. And that well was permitted and proposed for a depth of 12,400 feet, was it not?

A. That's correct.

Q. And what was the proposed target formation at that depth?

A. That depth would be sufficient to test the Strawn.

Q. Did you play any part in the decision about where to locate the Neuhaus 14 Federal Number 2 well?

A. No, I did not. That was strictly geological interpretation.

Q. When you look over on page 3 of the Application, this Application for Drilling --

A. Yes.

Q. -- and if you'll look at the numbered paragraph 3 --

A. Yes.

Q. -- it says, "The estimated depths at which water, oil or gas formations are anticipated to be encountered" --

A. Yes.

Q. -- it says, "Oil: Possible in the Yates, San Andres, Wolfcamp and Strawn."

And then it says, "Gas: None expected".

A. That's what it says.

Q. At this period of time, did you have knowledge about the Marathon Jordan "B" Number 1 well?

A. Yes, I knew it existed.

Q. That was a gas well, wasn't it?

A. That was a gas well, yes.

I might state, just to clarify, George Smith who does our applications to the BLM and -- He probably put that in there and I didn't -- nobody caught it.

Q. Let me show you Exhibit 1-D. This is the Division Form C-104 for the Neuhaus 14 Federal Number 2 well, Mr. Brown. It shows it was completed as a Wolfcamp gas well, does it not?

A. That's correct.

Q. All right. The well is completed, now, on July 14th, ready to produce, according to this form?

A. Yes.

Q. The completion test information that's reported on this form --

A. Yes.

Q. -- is based upon what, sir?

A. It is based on a short four-hour test.

Q. Okay. I show you what I've marked as Marathon Exhibit 2-A, Mr. Brown. This is the Division's approval of a temporary test allowable for the subject well?

A. That's correct.

Q. Did you participate in obtaining this temporary test allowable from the Division?

A. I had the four-point test run in the field, and we sent the data to the Commissioners. So in that way I participated.

Q. Let me show you the four-point test. I apologize, I just have the summary sheet on that four-point test. It's Exhibit 2-B. If we need the balance of the charts and exhibits, I can find those for you.

The conclusion from this four-point test is that the absolute open-flow potential of the well, based upon this test, is 2647 MCF of gas a day; is that about it?

A. I'm looking --

Q. Down at the bottom of the form, if I can --

A. Yeah, I see that number. I was remembering it. I think I have one that's 2.8 BCF.

Q. Okay.

A. But I don't see any signature on this report.

Q. Did you --

A. But it was a low test, yes.

Q. Did you witness this test?

A. I wasn't in the field, no.

Q. I'm sorry, I didn't hear you?

A. I wasn't in the field, no.

Q. Okay. Did you review the data that was generated from the test in the field to satisfy yourself that this four-point test had been taken under the conditions set forth in the Division Testing Manual?

A. Yes, I did, and we realized that after we pulled the bottom, that the bottomhole pressure drawdown was only 10 pounds and that the field people had started out at such a low rate that we wasn't able to void the tubing of fluid.

Therefore, we felt like this test was not a valid test for the potential of the well.

Q. The first -- Has all production of gas from the well been produced into a pipeline?

A. Yes, it has.

Q. There's been no flaring of the gas?

A. No, there hasn't.

Q. The initial first production on the well was when?

A. Initial first production? I think it was -- I want to say the 23rd but I don't remember.

Q. Do you have available with you daily production information for the subject well from first production through a current date?

A. I have it from -- Well, not with me, no.

MR. KELLAHIN: Let me ask you this in order to expedite the process: If you -- With Mr. Carr's consent, I would ask that the Applicant be required to submit to the Examiner a daily tabulation of all volumes produced from the well, the gas condensate, the gas, any liquids, including water, from date of first production.

EXAMINER CATANACH: Any objection, Mr. Carr?

MR. CARR: No, we have no objection to that.

Q. (By Mr. Kellahin) Okay, Let's go on, now, to the next letter with the Oil Conservation Division, Mr. Brown.

On August 13th, the Division issues another temporary test allowable for the subject well?

A. Yes.

Q. And this is based upon another four-point test?

A. That's correct.

Q. Have there been any other tests on the well

except for the original four-point test and this new four-point test?

A. No, we ran this four-point test, and this second letter is the result of our re-testing.

Q. Okay. Did you participate on behalf of your company in obtaining the additional tests allowable authorized under the August 13th letter?

A. Yes, I did.

Q. Let me show you what is marked as Marathon Exhibit 2-D. Is this the new four-point test on the subject well?

A. Yes, it is.

Q. Have you reviewed this data?

A. Yes, I have.

Q. Were you in the field when this data was taken?

A. No.

Q. Can you describe for us whether or not the well was properly conditioned before the test was taken?

A. Yes, we continued to flow it till we had a good, stable gas flow rate at the higher rate so we could keep our tubing unloaded.

Q. How long a period of time did it take you to get a stabilized flow rate on the well?

A. We flowed it from -- We continued to flow it from test one to the beginning of test two.

Q. All right. And at what rates were you flowing the well between test one and test two?

A. Approximately 3.3 million.

Q. That rate is substantially in excess of the authorized daily producing gas rate issued to you by the Division on the July 21st letter, is it not, Mr. Brown?

A. Yes, but we also had from the Hobbs Division the allowable to produce 6000 barrels of condensate in July, August and September, and we had not exceeded the 6000-barrel limit between tests.

Q. Apart from that authority, did you call Santa Fe and obtain additional authority to produce the gas volumes in excess of the permitted gas rates on the July 21st letter?

A. Yes, they said we could -- This 882 MCF per day was from the time we put it on line until they said an order would be issued.

So they said we could produce it at 882 MCF a day for X number of days, or we could produce it all in one day.

Q. Let me have you pull out the July 21st letter.

A. Okay.

Q. Do you have that? It says, "You can produce -- " and I'm reading the second sentence of the first paragraph. "You can produce the well to gather data for your hearing scheduled for August 12, 1993, but not beyond that date until an order has been issued in the case."

That's not what you did?

A. No, we didn't do this, because we also had a letter from Jerry Sexton at Hobbs, who had this and had evaluated this, I guess, on a GOR basis. I never did quiz him how they came up with that.

But they said we could produce up to 6000 barrels of condensate in July, 6000 barrels in August, and 6000 barrels in September.

And that was what we was going by. And those volumes is what we didn't exceed between the two tests. They never restricted us to a rate. They said we could produce it to get a sufficient test or an accurate test.

Q. On August 13th, the Santa Fe office of the Division, the Director, gave you additional testing authority, and now you're allowed to produce 11.7-plus million -- MCF a day?

A. That is correct.

Q. Have you exceeded that rate since this letter was issued?

A. No, we haven't.

Q. Have you shut in the well as of today?

A. No, we have not.

Q. Do you plan to shut in the well as of today?

A. No.

Q. What authority do you have from the Oil Conservation Division that allows you to produce this well beyond today's hearing date?

A. They said we can produce at 11 million -- 11.7 million a day for test purposes.

Q. Would you read the last sentence of that paragraph?

A. "The testing allowable was 882 MCF per day, which was one-third of the calculated -- "

Q. No, sir, I've misdirected you. The very last sentence of the last paragraph says, "All other provisions of my July 21, 1993 letter to you remain in effect."

A. That's how I read it.

Q. Do you read that to mean that you can produce this well beyond today?

A. Yes, we read it -- we meant -- we interpreted this letter as we can continue to produce it, as long

as we're testing the well.

And we're continuing to test the well, not for open-flow calculations, but to determine what optimum rate we can produce it to prevent connate water from increasing.

MR. KELLAHIN: I'll save my engineering questions for my witness. Thank you.

EXAMINATION

BY MR. STOVALL:

Q. I have one simple question for you.

Do you know whether Mr. LeMay reports to Mr. Sexton or Mr. Sexton reports to Mr. LeMay?

A. When we turned in --

Q. Answer my question, please. Which one reports to whom?

A. I think Sexton reports to LeMay.

Q. Okay. Whose letter would have higher authority, given that hierarchy?

A. I would assume LeMay's

MR. STOVALL: Good answer. No further questions on that.

EXAMINER CATANACH: Mr. Brown --

THE WITNESS: But I -- Can I say one thing?

MR. STOVALL: No, I think the Examiner has got a question for you, Mr. Brown.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Brown, the well -- the absolute open-flow potential of the well is 35 million a day.

Do you know what the ability to produce into the pipeline is for this well?

A. We've produced it at 5 million a day. I would expect probably 5 million is going to be its limit, 5 to 6 million a day.

Q. So that's at full capacity, producing into the pipeline, you can produce 5 or 6 million a day?

A. (Nods)

Q. So there actually is no penalty on the well, even -- Originally you were told that you could produce at one-third of the absolute open-flow potential?

A. Uh-huh.

Q. So really, there is no penalty on the well. You're producing the well full out?

A. We have it pinched back to 36/64ths, so we haven't opened it wide open. We've opened it for two hours, wide open, and was able to get 4.8 million a day.

We haven't really opened it full out to know what the deliverability into the pipeline would be. I'm just estimating or guessing.

Q. So that estimate again was 5 million?

A. I would guess if we opened it wide open, we could make it five to six and a half million a day.

Q. The Jordan well is producing at what rate? Do you know?

A. The last C-115 I saw was in May, and it was about 5 million a day and 500 barrels of condensate.

Over its life, from the time it came on stream till its C-115 report in May, it has averaged over 5 million a day, for over a year and a half, and 531 barrels of condensate a day, I believe.

As I testified, these two wells probably have the same capacity to produce.

Q. So your recommendation is that no penalty be instituted on the Manzano well?

A. That's correct. I think they both will be producing equally and protect correlative rights and drain the reservoir effectively and completely.

And I think if that's the case, they'll still be able to produce 50 percent of the remaining reserves, which is up above the gas under their acre-feet.

EXAMINER CATANACH: I don't have anything else. The witness may be excused.

MR. CARR: I have nothing further of Mr.

Brown. That concludes our direct presentation.

EXAMINER CATANACH: Let's take five minutes.

(Thereupon, a recess was taken at 2:50 p.m.)

(The following proceedings had at 3:02 p.m.)

MR. KELLAHIN: Call at this time Lisa Gholston.

LISA GHOLSTON,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. How do you spell your last name, Lisa?

A. G-h-o-l-s-t-o-n.

Q. And Gholston is how you say it?

A. Gholston, yes.

Q. Would you please state your name and occupation?

A. Lisa Crawford Gholston, and I'm a geologist.

Q. Ms. Gholston, on prior occasions have you testified as a petroleum geologist before this Division?

A. No.

Q. Would you summarize for us your education?

A. Yes, I graduated from Duke University with a bachelor of science in geology, and I graduated from

the University of Oklahoma with a master of science in geology.

Q. In what years did you obtain your bachelor and then your master's?

A. I obtained my bachelor's degree in 1984 and my master's in 1987.

Q. You're going to have to take care to speak up. There's a rattle in the hall here --

A. Okay.

Q. -- and you're soft-spoken.

Summarize for us what has been your employment experience as a geologist and with particular emphasis to the Permian Basin.

A. I started with Marathon in 1987 in the Gulf Coast region, exploration. I've worked there for two years. I moved to the Michigan Basin exploration region, worked there for a year and a half. And for the last two years I've worked southeast New Mexico exploration and development for Marathon.

Q. When we talk about locating, exploring for and mapping Wolfcamp horizons, is that something that you do on a regular, daily basis?

A. Yes.

Q. You're also familiar with the Strawn oil production in southeastern New Mexico?

A. Yes.

Q. Have you prepared Strawn oil maps for other purposes for your company?

A. Yes.

Q. As part of your duties, were you asked to make a geologic investigation of the size and the shape of the Wolfcamp reservoir that's the subject of this hearing?

A. Yes, I was.

Q. And were you able to utilize available data to reach, to your satisfaction as an expert, sufficient information upon which to arrive at conclusions for which you could support?

A. Yes.

MR. KELLAHIN: We tender Ms. Gholston as an expert petroleum geologist.

EXAMINER CATANACH: Ms. Gholston is so qualified.

Q. (By Mr. Kellahin) Before we talk about the displays specifically, let's talk about some of the other issues.

Let's talk about the Wolfcamp reservoir in this area and its relationship, if any, for Strawn oil exploration. Is there a relationship?

A. No, there is no relationship between the

Wolfcamp and the Strawn as far as exploration in this area.

Q. Would an exploration geologist such as you be able to take Wolfcamp information in this area and make informed decisions about the potential for Strawn oil in this area?

A. No.

Q. Would you as a geologist recommend that had you participated in the in the Sims well in the southwest corner of 12, that you would have stopped at the Wolfcamp and not penetrated on into the Strawn in order to have data about the Strawn?

A. No.

Q. Where's the nearest Strawn oil production?

A. Four miles south and a little bit east, there's one well that produces from the Strawn. But the bulk of the Strawn production is a good 18 to 20 miles to the west.

Q. How far west do you have to go before you get to developed Strawn production?

A. Twenty miles, into the Lusk field.

Q. One of the issues that was identified by the Applicant is whether or not Marathon's Jordan "B" Number 2 well is in the same reservoir as the Jordan "B" Number 1 well when we look at the Middle Wolfcamp.

A. Yes.

Q. You heard that?

A. Uh-huh.

Q. What's your conclusion?

A. I believe that the Jordan "B" 2 well is in the same reservoir as the Jordan "B" 1 and the Manzano Neuhaus well, in the Middle Wolfcamp.

Q. Is there going to be a substantial disagreement between your geologic conclusions about the size and shape of this Wolfcamp reservoir from Mr. Brown's conclusions?

A. Yes.

Q. In order to satisfy yourself that you had made the best possible effort as a geologist to create the most well-defined map as you can, what did you do?

A. Well, I gathered all the information on the surrounding wells, all the subsurface information in the area, correlated those wells, correlated the Middle Wolfcamp zone, made cross-sections, cross-sections and maps in the area, and then I was able to confirm those maps and refine them with the engineering data that we have in the area.

Q. Give us, based upon that study and that data, give us your conclusion or summary about the geologic setting in which this Wolfcamp formation is placed.

A. I believe this Wolfcamp formation is deposited as a dolomite debris flow from the northwest shelf area. The -- It's well documented in the literature that dolomite debris is deposited in a paleotopographic low area, and I believe that the Manzano Sims, the Jordan "B" 1 and the Jordan "B" 2 are in a paleotopographic low, and that's why you have the dolomite debris deposited there.

Q. Were you able to satisfy yourself that you could construct a cross-section through this area in a north-south direction that would give you geologic information that was useful to you?

A. Yes.

Q. Let's turn to Exhibit 3, which is the A-A' cross-section. Any trouble with log correlation, picking a datum point on which to hang all these logs?

A. No, I picked the top of the Wolfcamp zone, which is also the base of the third Bone Spring sand, and it's a good correlation in the area.

Q. How about the quality of the logs that you're utilizing?

A. They're all good quality logs.

Q. You've got modern-day logs --

A. Yes.

Q. -- that are useful to you?

A. Yes.

Q. As you begin to build a conclusion about the size and shape of the reservoir, when you look at your A-A' cross-section, what does that tell you?

A. Well, A-A' is a north-south cross-section through the two Jordan "B" wells, the Marathon wells, the Manzano Neuhaus well, and the last one on the cross-section is the BTA Neuhaus well which was drilled in early 1993.

Q. Those are all of the north-south data points that you have in this reservoir, right?

A. Yes.

Q. What does it tell you about the extent of that reservoir north and south?

A. The reservoir is present in the Jordan "B" 2 well. That well encountered seven feet of clean dolomite with greater than four percent porosity in the Middle Wolfcamp zone. That well was perforated in that zone and it did cum 28,000 barrels of oil.

The zone thickens as you move to the south, to the Jordan "B" 1 well. That well encountered 39 feet of net pay in the Middle Wolfcamp zone.

As you move a little bit south to the Manzano Neuhaus Federal 2, again you see the Wolfcamp zone thickens, and that well encountered 90 feet of clean

dolomite pay.

Finally, the BTA Neuhaus well, you can see the Middle Wolfcamp zone is still present, but there is no reservoir quality rock in that well.

Q. Describe us the vertical interval that you're dealing with when you're trying to find the Wolfcamp. What have you displayed on here as that interval?

A. You mean as far as thickness?

Q. First of all, how is it identified? The zone of interest that you're going to later prepare the isopach for, how is that illustrated on this display, Exhibit Number 3?

A. Well, I've colored in light blue the gross pay interval, dolomite pay interval that I --

Q. Describe for us what tells you that that is the gross interval.

A. The porosity at the top of the dolomite zone to the porosity greater than four percent at the base of the dolomite zone.

Q. Within that interval you have a darker blue shading?

A. Yes, those shadings signify the gamma-ray cutoff of 30 API that I used and the four-percent porosity cutoff.

Q. You're using the same criteria as to cutoff

points that Mr. Brown used?

A. Yes.

Q. The 30 and then the four percent?

A. Yes.

Q. Are you having a disagreement with him over the pick of the interval, the thickness?

A. Of the overall gross interval, I believe he has the bottom 15 feet or so that I did not have as the gross pay.

Q. Why did you exclude the bottom 15 feet in his well?

A. I felt like those 15 feet were right at the four-percent pay cutoff.

Q. And so you excluded them?

A. So I excluded -- Yes. It went from a much greater porosity down to four percent.

Q. That lower 15 feet, do you see any indication that it's five percent or greater?

A. No.

Q. So you cut it off?

A. Yes.

Q. Do you have any disagreement with him about the Jordan "B" Number 1, the Marathon well, in terms of how you cut off the thickness there?

A. I don't believe so.

Q. Okay. All right, let's look at the B-B' cross-section.

EXAMINER CATANACH: Hang on a second.

(Off the record)

Q. (By Mr. Kellahin) Describe for us the B-B' cross-section.

A. Cross-section B-B' is an east-west cross-section through the reservoir.

The first well in the cross-section is the Amoco Federal AG Com Number 1. You can see the Middle Wolfcamp zone is present in that well, but it did not encounter any reservoir-quality rock.

As you move to the east, the second well in the cross-section is the Manzano Neuhaus Number 2 well, which is the same well that's on cross-section A to A'. Again, you see the 90 feet of net pay in that well.

And the last well in the cross section is the Manzano Sims State Number 1 well. In this well, the overall Middle Wolfcamp zone is much thinner than the offset Neuhaus Number 2 well, and again it encountered no reservoir-quality rock.

Q. Let's turn to Exhibit Number 5 and have you identify and describe for us the structure map. This is on the top of the Wolfcamp, is it not?

A. Yes, which is the datum that I've hung the

cross-sections on.

Q. Okay.

A. The contour interval on this structure map is 50 feet.

There is a subtle dipping, monocline to the west, and you can see that in the vicinity of the Jordan "B" 1 and the Neuhaus Federal Number 2 well there is evidence of a low in that area at the top of the Wolfcamp.

Q. Fit together for us, if you will, what you see as the importance of the structure in Sections 14 and 11, how it affects this Wolfcamp interval.

A. As I said before, the Wolfcamp dolomite debris is deposited in paleotopographic lows, so it does show evidence of the debris being deposited in this area.

Otherwise, the trap for the Wolfcamp dolomite debris is stratigraphic, so the structure does not affect the trap.

Q. Would that deposition provide an explanation as to why there is a certain thickness within this pod, if you will, of Wolfcamp?

A. It wouldn't necessarily show you how much thickness that would be present; it would just suggest an area where deposition is likely to occur.

Q. Let's look at Exhibit Number 6. All these exhibits were prepared by you?

A. Yes.

Q. This is your work?

A. Yes.

Q. Describe for us what you've done with the net dolomite porosity isopach.

A. I've included the Jordan "B" Number 2 well, the Jordan "B" Number 1 well, and the Manzano Neuhaus Federal Number 2 well in the Middle Wolfcamp reservoir in this area, and the evidence that I have to pull the zero line to the north is the Manzano Jordan "B" 2 well.

Q. Okay. No doubt in your mind as a geologist that that is geologically in the same reservoir as the Neuhaus Federal 2 and the Jordan "B" Number 1?

A. No.

Q. It is in the same one?

A. It is in the same reservoir.

Q. There's some other information on the display. In the east half of 14, there's a box in the center?

A. Yes.

Q. The side boundary dimension is 660?

A. Yes.

Q. What does that represent?

A. That is the box for a legal location if you had a north-half laydown unit in the north half of Section 14.

Q. All right. The dashed box is a standard window for a north-half spacing unit?

A. Yes.

Q. Look in the east half of 14. What's the dark solid --

A. Oh, in the east half, the solid box is the legal location for a standup unit in the east half of Section 14.

Q. Apart from the substantial differences in the mapping, both you and Mr. Brown agree that there is no location in the east half of 14 that's a standard location for their well that would have hit the reservoir and been productive?

A. Yes.

Q. The -- Having determined the shape of the reservoir, how do you decide how large that shape is going to be within the control points of the geology that you're working with?

A. Well, I used the subsurface well control. I used the geologic model of dolomite debris deposition, and I also worked closely with our engineering

department and used the material balance data that they had to tell me how large the reservoir should be.

Q. All right. You take your data to the geologist and ask him to run an engineering calculation to see what he gets for gas in place and see if it will fit within the container that you've mapped?

A. Yes.

Q. And what did you find?

A. Our maps are very -- I mean, my map and his calculations were very close.

Q. How do you decide as a geologist the contour lines and the spacing of those lines within the zero line on the isopach?

A. Those are based on the well control that I have. I just try to keep everything equal distance, and fit the data that I have.

Q. In applying that methodology, you come up with how many net feet of dolomite with a porosity greater than four percent for your well?

A. For the Jordan "B" 1 well?

Q. Right.

A. Thirty-nine feet.

Q. And what do you find for the Neuhaus Federal 2 well?

A. Ninety feet.

Q. Within the zero line, is there an 80-foot contour line?

A. Yes.

Q. And does that thickness of 80 feet or greater extend to your spacing unit?

A. Yes.

Q. Geologically, Ms. Gholston, is Manzano gaining an advantage over Marathon with their well located as it is located in the reservoir?

A. Yes, at that location they have penetrated over half -- over twice as much reservoir-quality rock as we have penetrated with our Jordan "B" 2 well -- I mean Jordan "B" Number 1 well.

Q. You would have a comparable location for your spacing unit, but it would be at an unorthodox location, would it not?

A. Yes, that's correct.

Q. You've had an opportunity to hear Mr. Brown's geologic explanation and to review during his discussion each of his displays, did you not?

A. Yes.

Q. Has his testimony and his displays caused you to change your opinions or conclusions about your own work?

A. No.

Q. Has he said anything during the presentation of the testimony today that would cause you to go, Oh, my goodness, I have made a mistake, I need to go back and change my display?

A. No.

MR. KELLAHIN: No further questions.

We move the introduction of Exhibits 3 through 6.

EXAMINER CATANACH: Exhibits 3 through 6 will be admitted as evidence.

Hold on, Mr. Carr, a second, if you would.

(Off the record)

EXAMINER CATANACH: Sorry, Mr. Carr. You may proceed.

CROSS-EXAMINATION

BY MR. CARR:

Q. Ms. Gholston, if I look at your geologic interpretation and compare it to that of Mr. Michael Brown, it looks to me like you used similar approaches but have come up with fairly different pictures of the reservoir. Do you think that's a fair statement?

A. Yes.

Q. Mr. Kellahin says that he's a novice in this area, and he's really not. And I say I'm a novice in this area, and even he will tell you I am.

So if my question doesn't make any sense, stop me.

A. Okay.

Q. If I understand these Wolfcamp pools in this area, we have some that are debris flows, we have others that might be buildups; is that correct?

A. I feel in this area that generally they're debris flows.

Q. And what you have mapped on your isopach, which is Exhibit Number 6, is really a debris flow?

A. Yes.

Q. When you have a debris flow, does it typically extend over a larger areal extent than a buildup, or is that a fair characterization?

A. It typically is over a larger extent.

Q. Now, just south of this Lea Wolfcamp is the Osuda Wolfcamp. Are you familiar with that?

A. Yes.

Q. In your opinion, is that a debris flow?

A. Yes.

Q. That's also a debris flow?

A. (Nods)

Q. Now, in mapping a reservoir of this nature, you have certain data points --

A. Yes.

Q. -- and then you take those data points and you construct the map?

A. That's correct.

Q. Now, with the information that you have and had available to you in constructing your isopach map, with a debris flow isn't it possible that in fact the reservoir could extend farther to the south?

A. No, I don't believe that it does, based on the structure at the base of the Wolfcamp zone, and just good geologic sense is to draw the zero line halfway in between your two control points, and that's what I've done in this area.

Q. And so where you've placed your zero contour is halfway between the control points?

A. It's based on that and on the structure at the base of the Wolfcamp where the debris --

Q. So here in fact --

A. -- where the base of the debris, the porosity zone.

Q. In fact, here when we have your zero contour line as it comes across the northeast of 14, it's actually closer to the Neuhaus Federal Number 2 than to the Number 1 well to the south; isn't that correct?

A. Yes, and that is based on my structure map that I have on the base of the Wolfcamp debris that

shows the structure between those two wells.

At the base of the debris there's 80 feet -- The well to the south is 80 feet higher than the Neuhaus Number 2.

Q. Now, if we take a look at this map and we look at the control and the information, you had to actually draw your contours in the central portion of what you've mapped as being the pool.

Is there any particular information that you relied on, other than well control, for the contouring between your Marathon Jordan "B" Number 1 and the Manzano Neuhaus Federal Number 2?

A. Well control and, as I said, I did work closely with our engineering department and their material balance numbers to make sure that I was -- had about the same size of reservoir.

Q. In terms of the 80-foot contour that you have in the southeast of 11 --

A. Yes.

Q. -- is there -- there is no information that would dictate that that 80-foot contour would be placed right where it is, as opposed to sliding farther to the south; is that true?

A. Well, that's my best interpretation, and I do believe that the Jordan "B" Number 2 well pulls the

whole reservoir to the north, so my contours have followed along those lines and been oriented more north-south, and that is the direction that I believe the debris flow is coming from, is from the north.

So I have the whole thing kind of oriented north and south.

Q. And you're not saying that the Jordan "B" Number 2 actually is information that would pull that 80-foot contour farther to the north, are you, and away from the acreage in 14? Or is that what you're saying?

A. I'm saying that the Jordan "B" 2 pulls the whole reservoir to the north and therefore the 80-foot contour line to the north.

Q. What is the maximum thickness that you encountered in the Jordan "B" Number 1?

A. Thirty-nine feet of net pay.

Q. And yet you are seeing 80 feet or more within just a few hundred feet of that?

A. Yes.

Q. And that's based on just your interpretation?

A. Yes.

Q. Now, you also appear to have constructed the map so that based on your interpretation, the Neuhaus Federal Number 2 is actually at the top of the structure. Do you think that's fair?

A. This is not a structure map. It's an isopach map.

Q. The thickest portion of the formation?

A. Yes.

Q. Do you think that it's not possible that that thicker portion inside the 80-foot contour could extend south of that well?

A. No, my best interpretation is that it's to the north.

Q. And that's based simply on the fact that the "B" Number 2 is pulling the reservoir to the north and that because of that, you find an additional 41 feet within a couple of hundred feet of the "B" 1?

A. Yes.

Q. Now, the Jordan "B" 2, that well is plugged and abandoned?

A. Yes.

Q. You don't have any plans to produce it?

A. It did produce from the Wolfcamp.

Q. But you don't have any further plans to do anything with that well?

A. No, not to my knowledge.

Q. It is in the same horizon, definitely, as the wells to the south that are the real subject of the case?

A. Yes.

Q. In your experience, is it possible that you can have wells in the same horizon on 160-acre tracts that in fact would not be in the same continuous reservoir in the Wolfcamp?

A. Not in this area. And we also have engineering data that backs up the fact that the Jordan "B" 2 is in the same reservoir.

Q. And that engineering data is just a calculation to determine the volume in the reservoir?

A. No, that would be presented by our engineer later in the case.

Q. Did you prepare your geologic interpretation and give it to the engineer?

A. Yes.

Q. And then they base their engineering on that, as you understand it?

A. You'll have to ask him.

Q. After the engineering work was done, did they ask you to make any changes in your geologic interpretation?

A. Not in my interpretation. I did make sure -- refine my map to make sure the size was not a lot larger than their material balance indicated that it would be.

Q. Looking at the map of the standup spacing unit, it's obvious there is no standard location on the east half of this tract in which a well could be drilled; isn't that right?

A. That would encounter Wolfcamp debris?

Q. Yes.

A. That's right.

Q. So they would have to drill at an unorthodox location if they were going to intercept the formation as you have mapped it on Exhibit 6?

A. Yes.

Q. With a laydown unit they still at a standard location could not be at the top of the structure or at the thickest portion of this map as you've shown; isn't that right?

A. Yes.

Q. They could get there and be standard on an east -- or north-south axis; they wouldn't have to encroach on Marathon?

A. For a laydown north half, yes.

Q. Yes.

A. Not at the highest -- Not at the thickest part of the reservoir.

Q. Unless they were -- they could be there if they were unorthodox on an east-west axis --

A. Oh, if they were unorthodox?
Q. -- not a north- south? Is that right?
A. Yes.
Q. Did you do a net porosity map of the area, an isopach?
A. Based on just porosity and gamma ray?
Q. Yes.
A. No, I used a clean dolomite gamma-ray cutoff.
Q. Was there any reason that you didn't do the net porosity map?
A. Well, I didn't want to count feet of porosity in the shaley zones because I did not feel -- Although the porosity would read higher than four percent, I don't think it contributes to the reservoir when it's shaley.
Q. And where is the reservoir shaley?
A. With a gamma-ray cutoff, with a higher gamma-ray than 30 API is the cutoff I used, but --
Q. And here again, I'm getting where I don't know, but if you move away from the heart of the reservoir is that where you encounter more shale?
A. Yes, you can encounter more shale in the flanks.
Q. And so you would have more shale -- Certainly, the Jordan "B" Number 2 would be on the

flank?

A. Yes.

Q. Did you -- And would that porosity not be as effective at that area? Is that what you were telling me?

A. The porosity in the Jordan "B" 2 was about the same percent, but --

Q. Not as much of it?

A. Just not as thick. Seven feet.

Q. Now, if I look at your cross-sections, you cut off about the bottom 15 feet of the formation as it is shown in the logs on the Manzano Neuhaus Federal Number 2 well?

A. Yes.

Q. And why did you cut that off?

A. I felt like the porosity was right at the four-percent cutoff, and you went from a very high porosity to a low porosity, and I do not feel that that was part of the reservoir.

Q. Did you look at the cross-plot on the lots?

A. Yes.

Q. And when you looked at that, did you find zones that had as high as 6.3 percent?

A. No.

Q. You didn't?

A. (Shakes head)

Q. Is it your testimony that everything in that bottom 15 feet was below four percent?

A. No, there are some zones where it gets a little higher than four percent but I felt it was right on the four-percent, five-percent line.

Q. When you constructed your isopach map, your Exhibit Number 6, was that just a strict cutoff on four percent, or did you also take some leeway and perhaps omit some zones that might have more than that?

A. I didn't omit any zones that were in the area that I've shaded light blue that I feel is the gross reservoir interval, no, I did not.

Q. In making this decision to drop the bottom 15 feet out, did you have any mudlog information available to you?

A. No.

Q. How long have you had the Manzano log?

A. I think I got it in mid-July. I'm not sure of the date, but I --

Q. Where did you get it?

A. From an interest owner in the well.

Q. I believe you testified that you felt that the Manzano well was in fact gaining an advantage on Marathon --

A. Yes.

Q. -- is that correct?

And I understood your answer to be it was because they had really twice as much rock as Marathon --

A. Yes.

Q. -- is that correct?

Is that because of the -- Is the advantage because they are 660 from you or because they have twice as much rock?

A. Well, I don't think they would have twice as much rock if they weren't in an illegal location.

Q. Unless they were in a laydown unit in the north half?

A. I still don't think they would have 90 feet. I think they would have a similar section to ours.

Q. They could be with a laydown location -- they would have to be 660 feet away from the Manzano; isn't that right -- I mean -- I'm sorry, Marathon?

A. Yes, and 1980 from the east line.

Q. But at 660 feet from your property, they do encounter this thick portion of the reservoir?

A. Yes.

Q. Now, my question is, if they were at that location and they didn't have a thicker portion of the

reservoir, would they still have gained an advantage on you, in your opinion?

MR. KELLAHIN: I've been patient, Mr. Examiner. I'm going to object.

It matters not about the spacing of this well on the north half of the section. That's not what this Applicant chose to do. They aligned themselves on the east half of this section. They are at an illegal location. That's the rule. And talking about a standard laydown north half is wasting our time.

EXAMINER CATANACH: I agree, Mr. Carr.

MR. CARR: Mr. Catanach, I have one question. Where I'm trying to go with this is, I'm trying to understand what is meant when this witness says "advantage", and I'm trying to see, is it because of distance toward a lease line or thickness of the reservoir? That's where I'm trying to go.

EXAMINER CATANACH: All right.

Q. (By Mr. Carr) Is it because we're closer to you, or is it because of the thickness of the reservoir?

A. Thickness of the reservoir.

MR. CARR: Okay. That's all I have.

That was a long way to that answer. That's where I was going.

EXAMINATION

BY EXAMINER CATANACH:

Q. Ms. Gholston, one of the central issues here is going to be whether or not that reservoir extends into the north half of Section 11 there.

Can you tell me why there's such disagreement between you and the other party's geologist on that point?

A. Well, he does not feel that the two wells, the two Jordan "B" wells, are in the same reservoir, and I feel that they are, so I have to draw my debris pod to the north to include that well, whereas his map, since he doesn't feel they're in the same reservoir, he doesn't have to draw the debris pod all the way up there.

Q. You're looking at the same information basically, aren't you?

A. Yes.

Q. Same log information?

Is it that subjective, that you can put it up there and he can't?

A. Yes, I guess all he'd have to do is, on my cross-section A to A', pinch out that blue zone before he gets to my well and start a whole 'nother reservoir zone and separate the two reservoirs.

But like I said, we do have some engineering data that shows that those wells are in the same reservoir.

Q. Okay. Basically, you both agree that there is some reservoir in the Jordan "B" 2 well, but his opinion is that it's in a different reservoir?

A. Yes, his maps had seven feet also at that location, but he just drew them in a different -- He just separated the two debris pods.

Q. Is there any evidence that you can see that would substantiate his terminating that reservoir in between the Jordan "B" 1 and "B" 2?

A. No, there is no well control between those two wells.

EXAMINATION

BY MR. STOVALL:

Q. Ask a follow-up to that, because I believe his testimony was that he based that interpretation on what he saw as the nature of the Wolfcamp in this area?

A. Yes.

Q. Did you understand him to say that?

A. Yes.

Q. Based upon your knowledge of the Wolfcamp in the area, is that a reasonable basis upon which to make this a smaller pod, not extended up there, and perhaps

find a second pod around the "B" 2?

A. Yes, there is a field to the south that -- there's two east-west -- there's three wells east-west.

The middle well did find debris, the two wells east-west did not, similar to the cross-section B to B' that I show, it does pinch out quickly to the east-west.

In that area there isn't any well control directly to the north and to the south, so it doesn't -- it's not constrained --

Q. So it's not an outlandish interpretation by him as a geologist; is that correct?

A. No.

MR. STOVALL: Okay.

FURTHER EXAMINATION

BY EXAMINER CATANACH:

Q. Is it reasonable to assume that there could be another pod to the north there, another reservoir?

A. I don't believe it is, based on our engineering data that shows that those two wells are in communication.

EXAMINER CATANACH: That's all I have. The witness may be excused.

MR. KELLAHIN: I'd like to call Mr. Craig Kent.

CRAIG KENT,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. My name is Craig Kent and I'm a reservoir engineer with Marathon Oil Company in Midland, Texas.

Q. Mr. Kent, on prior occasions, have you testified as a reservoir engineer before the Division?

A. Yes, I have.

Q. And you're appearing today in that same capacity?

A. Yes, I am.

Q. Have you been involved with the geologic analysis of this particular reservoir and, in discharging your duties as a reservoir engineer, made certain calculations to verify and validate the geologic displays that Marathon's presenting?

A. Yes, I have.

Q. Have you specifically worked with Ms. Gholston on looking at her net pay map and to determine whether or not, based on your independent engineering judgment, the size and shape of the container that

she's mapped would fit the volume of original gas in place, as you calculated it to be?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Kent as an expert reservoir engineer.

EXAMINER CATANACH: Mr. Kent is so qualified.

Q. (By Mr. Kellahin) Let's start with that topic and direct your attention first to Exhibit Number 7 and have you identify and describe for us what you've done.

A. Exhibit Number 7 is a plot of wellhead pressure versus rate for the Manzano Neuhaus 14 Federal Number 2, as taken from their multi-point backpressure test dated 8-3-93.

What is shown are the wellhead producing pressures or flowing tubing pressures versus the producing rate for each of the four points of the test.

Q. Let me stop you right there, Mr. Kent. Is this the kind of analysis and information that you look at on a regular daily basis?

A. Yes, it is.

Q. You've done hundreds if not thousands of these kinds of analyses?

A. Yes, I have.

Q. In looking at the original four-point test on

the Manzano well, that deliverability is what we're talking about?

A. Yes.

Q. Did you see anything as an observer of that data that caused you a concern?

A. Yes, I did. Primarily when you're running a four-point test, you try to get a good spread of rates and pressures so that you can accurately predict what the AOF of the well is.

In this case, there basically is no spread on the pressures. They reported a bottomhole static pressure of 2055 pounds and then producing bottomhole pressures ranging from 1984 pounds to 2000 pounds, which are roughly 97 percent of the reservoir pressure.

Q. What's the standard you would apply as a reservoir engineer if you were having this test conducted for you?

A. If I was going to conduct it, I would use a standard that's shown in the *New Mexico Backpressure Testing Manual*, which states that the producing pressure for the lowest rate should be no more than 95 percent of the static pressure and that the producing pressure for the highest rate of the test should be no more than 75 percent of the static pressure.

If you look at all four of the producing

pressures on this test, they're all right at about 97 to 98 percent of the static pressure.

Q. What's your conclusion about the reliability of the original four-point test taken on the Manzano Neuhaus 14 well?

A. The original or the August 3rd?

Q. I'm sorry, the August 3rd.

A. The August 3rd test, I believe that the four points are too closely spaced to give an accurate depiction of what the AOF is.

Q. When you look at the end result of the new four-point test, the August 3rd, 1993, test, and look at the configuration of the tubing size in that wellbore, the pressures in the reservoir and the total volume of gas reported of 35 million MCF a day, what does that tell you?

A. Well, with 2 7/8 tubing in the well, if you were to open it up to atmosphere and try to physically put 35 million cubic feet of gas a day and the associated liquids, you'd have a bottomhole pressure that's higher than the reservoir pressure.

So in reality, there's no way to produce that 35 million cubic foot a day through this well.

Q. Would you as a knowledgeable reservoir engineer utilize the new four-point test as a method by

which to calculate therefrom a penalty for this well?

A. No, I wouldn't.

Q. You've dealt with absolute open flow tests for some period of time, have you not?

A. Yes, I have.

Q. And you've testified before this Division on a number of nonstandard or unorthodox well locations, Indian Basin, Upper Penn primarily, have you not?

A. That's correct.

Q. Have you also been involved in hearings with regards to determining how to apply a penalty in a nonprorated gas pool?

A. No, I haven't.

Q. Okay. What would be your recommendation to the Examiner for a nonprorated gas pool in terms of how to apply the penalty against some number? Should it be applied against the AOF or the deliverability or something else?

A. I believe that the penalty should be applied against the actual deliverability of the well.

Q. And why do you reach that conclusion?

A. Because using the deliverability as the factor actually allows you to take into account what's really happening or what could potentially happen as far as production from the well.

Q. What is the current capacity of your well to deliver gas from this well into the pipeline?

A. We're currently producing at a rate of around 4 million cubic feet a day against a tubing pressure of roughly 255 pounds.

Q. Let me ask you to turn to Exhibit Number 8. Would you identify and describe that?

A. Exhibit Number 8 is basically two portions, or really three portions.

The top third, a graph entitled Jordan "B" Number 1, is a P-over-Z plot of pressure data taken from the well.

The middle section is that data presented in tabular form.

The bottom section, entitled Volumetric Calculation of Reservoir Volume, is simply that calculation of reservoir volume based on material balance.

Q. What's your conclusion?

A. My conclusion is that there is somewhere on the order of 5.8 BCF gas originally in place in this reservoir, and that volume is over -- is enclosed in 6250 acre-feet.

Q. Have you compared your volumetric calculation on reservoir volume, the 6250 feet -- acre-feet --

A. Yeah.

Q. -- to Ms. Gholston's net isopach?

A. Yes. I believe her net acre-feet came out to be about 6600, so we're within about five percent of each other.

Q. And that's within the usual margin of error in making those types of judgments?

A. That's correct.

Q. Have you had a chance to listen to Mr. Brown's engineering presentation where he has gone through the same process or method with his geologist, and he tells us his volumetric calculation balances with Manzano's geologic map?

A. That's correct.

Q. All right. Have you reviewed his testimony as he made it so that you could determine whether or not he has made any errors in his calculation that may account for a difference?

A. Yes, I have. I believe he has made an error in computing the Z or compressibility factor of the reservoir fluid.

Q. Explain to us how you get to that conclusion.

A. The Wolfcamp reservoir here is a gas condensate reservoir, and as such, when you determine the compressibility factor, not only do you have to

account for the compressibility of the gas that's produced off of the separator, but also the condensate that dropped out of solution or out of the gas phase as it was flowing up the tubing.

What we've done is, early 1992 we performed a recombination PVT analysis on the reservoir fluid and determined several Z factors over a range of pressures.

What we did was take a sample of separator liquid and separator gas, recombine them at the producing GOR, and then increase pressure and measure the PVT properties over several pressures.

Q. Mr. Brown's engineering calculation used a Z factor that was based on dry gas?

A. That is my -- That is basically what I would assume, looking at his Z factors versus some that I've produced for similar analysis.

Q. If he does that, how does that lead you into an error?

A. On the P-over-Z plot, it really isn't making much difference. I've plotted them both ways myself, and I don't come up with a significant difference.

Q. Where does it make a difference?

A. Where it makes a difference is where you start calculating the formation volume factor for the gas at original conditions.

Q. If you've made a mistake in the formation volume factor under original conditions, what then does that do to the calculation for reservoir volume?

A. In this case what it does, it makes the net acre-feet too large, because you're saying that the fluid is less compressible than what it actually is.

Q. How is that translated into an error when you analyze or try to verify his geologic size and shape?

A. What it does is, it means that the net map that the geologist has mapped, if it is matching the material balance, is too large.

The volume of the reservoir as shown by Manzano's map is too large.

Q. The Examiner has asked questions about the reservoir engineering data available between the Jordan "B" 2 and the Jordan "B" 1. Give us your best recollection of that information.

A. As I recall, the Jordan "B" Number 2 had a buildup test run on it on initial completion, which showed a reservoir pressure of roughly 4400 pounds, which corresponds to a gradient of roughly .4 PSI per foot.

On initial completion of the Jordan "B" Number 1 we also ran a bottomhole pressure buildup test, which indicated a bottomhole pressure of roughly

3800 pounds or a gradient of about .31 PSI per foot.

Subsequently, we shot some fluid levels on the Jordan "B" Number 2 to try to make some estimates of bottomhole pressure, and those pressures were in the neighborhood of 3800 pounds.

Q. What conclusion do you reach as a reservoir engineer, based upon that data?

A. That something -- Comparing the initial gradient pressure gradients on the two wells, there was something that caused some pressure drop at the Jordan "B" Number 1 location.

Q. At that point in time, is there any other point source in the reservoir that would explain that pressure drop, if it is not explained by looking at the Jordan "B" Number 2 well?

A. No, there is not.

Q. What's the conclusion?

A. That the Jordan "B" Number 1 and Jordan "B" Number 2 are in fact in the same reservoir.

Q. And if they are, then the geologist has to honor that data when she draws the geologic map?

A. That's correct.

Q. Anything else, Mr. Kent?

A. No.

MR. KELLAHIN: We move the introduction of

his Exhibits 7 and 8.

EXAMINER CATANACH: Exhibits 7 and 8 will be admitted as evidence.

Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. The Jordan "B" 2 is depleted, right?

A. No, it's not.

Q. It isn't?

A. That well was shut in because it's uneconomic because of high water-flow rates, high lifting costs. There's no electricity in the area. We had to pump the well -- or TXO actually had to pump the well to make it produce, and it's not economic.

Q. No anticipation that you will produce it?

A. In the Wolfcamp, no.

Q. When I look at your Exhibit Number 8, and I look at the graph at the top of the page, the -- on the line that you've plotted across the graph, you've based it on, I guess, two initial points on the extreme left; is that right?

A. That's correct.

Q. If you -- Are you aware that there was a DST taken on a well on July the 4th?

A. Yes, I am.

Q. And that there was a pressure point at that time of 2581 at 2.5 BCF?

A. Excuse me?

Q. There was an additional pressure point obtained at that time, on July the 4th?

A. That's correct.

Q. And you didn't use it?

A. That point, not for the building of this particular exhibit.

But if you were to take the pressure which has been testified of roughly 2128 pounds, corresponding Z factor, based on our PVT analysis of .6359, it gives you a P-over-Z value of roughly 3346, which falls almost exactly on the line.

Q. It is fair to say, though, is it not, Mr. Kent, that you did not factor in the pressure point that was obtained on July the 4th?

A. No, it's not -- Or yes, it is, I'm sorry.

Q. All right, I've got one more thing.

You ran a PVT analysis on fluids from the reservoir?

A. That's correct.

Q. Would you be willing to make that available to us?

A. Sure.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Kent, Exhibit Number 7, that's your interpretation of the four-point pressure test?

A. What I did here was try to get some idea based on the information that I had available, of what this well could actually deliver at the surface.

I plotted the four points. They fell roughly on a straight line, so I extrapolated that straight line down to zero pressure, then also showed on there with a dashed line roughly what the line pressure was at about 100 pounds. I think currently line pressure is more like 180 pounds to 200 pounds now that Manzano's well is on line, so I was being slightly generous.

Also, what you would normally expect to see is, as rate increases and wellhead pressure drops, that curve -- that line should actually become a curve and curve downward to some value that's less than what I've shown on the straight line due to additional friction pressure drops, as the gas expands.

But based on the data I had available, this was the best interpretation I could make.

Q. You estimate that the Neuhaus well can deliver over 7 million a day to the pipeline?

A. If you extrapolated using a straight line, that's correct.

EXAMINER CATANACH: Okay, I don't have any further questions.

MR. KELLAHIN: I'd like to call at this time Mr. Robin Tracy.

While Mr. Tracy is taking the stand, a housekeeping chore.

I did not move for introduction of the documents out of the well files that were marked as Marathon Exhibits 1-A through 1-B and Exhibit 2-A through 2-D.

We would move that introduction.

EXAMINER CATANACH: Exhibits 1-A through 1-B and 2-A through 2-D will be admitted as evidence.

MR. STOVALL: 1-A, 1-B? I've got at least a 1-C here. Let's make sure we've -- I've got a 1-D. I think it was 1-D. You had two permits and a completion report and a C-104 as Exhibit --

MR. KELLAHIN: 1-A through -D and 2-A through -D.

MR. STOVALL: I think, yeah, there's a 2-D -- Correct.

(Off the record)

MR. KELLAHIN: Is that straight?

EXAMINER CATANACH: I think so.

ROBIN TRACY,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Would you please state your name and occupation?

A. Robin Tracy, I'm an operations engineering supervisor for Marathon Oil Company in Midland, Texas.

Q. Mr. Tracy, you're soft-spoken; you're going to have to find that microphone and --

MR. STOVALL: It doesn't -- It only goes into the tape recorder, so you're going to have to speak up.

MR. KELLAHIN: Oh, it doesn't? I'm sorry. You will have to speak up then.

Q. (By Mr. Kellahin) On prior occasions you're testified before the Division here in Santa Fe?

A. Yes, I have.

Q. Describe for us what it is that you do currently for Marathon Oil Company?

A. I supervise a group of engineers that our primary responsibility is completing wells, recompleting wells that have been depleted to look for behind-pipe reserves, a whole array of more operational

type work.

Q. Based upon that position with your company, have you investigated the circumstances surrounding the Manzano well?

A. Yes, I have.

Q. You're aware of the equities, if you will, that are in place in the reservoir as the two companies compete for the Wolfcamp gas that is in this reservoir?

A. Yes.

Q. Have you and your staff reviewed and come to a conclusion that you desire to express to the Examiner concerning how the Division should handle the continuation of production from this well at its illegal location?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Tracy as an expert petroleum engineer.

EXAMINER CATANACH: Mr. Tracy is so qualified.

Q. (By Mr. Kellahin) Let me have you, sir, turn to Exhibit Number 9 and identify and describe what you're showing.

A. This is a penalty calculation, and the one that's shown on Exhibit 9 is just a distance-ratio method from the straight standoff of what a legal

location is and what an illegal location is on the Neuhaus well -- or on the Manzano well.

Q. All right. Part of the methodology was to examine all reasonable options for a penalty and to see how they might fit or not fit this particular example?

A. That's exactly right, and when reviewing what an appropriate penalty should be, placed on the Neuhaus well, we went through numerous different calculations.

And the penalty that I'm going to describe here in this set of exhibits takes in three different factors.

And this first exhibit is the first factor. And as we go on through the data, we'll get to the other two parts of the equation that we feel would be a just penalty for the well.

Q. Exhibit 9, then, is a pictorial representing the footage encroachment factor in a penalty calculation?

A. Yes, it is.

Q. All right. Let's go to Exhibit 10. Identify and describe this display.

A. This display is based off of our geological interpretation of what the reservoir is. They're based off of the map that Lisa testified to.

We calculated that there were 72 acres on the

Manzano tract and 123 acres on the Marathon tract.

A simple ratio of that says that the Manzano well should be able to produce 58 percent of the Marathon allowable to keep equity.

That's step 2 in the equation that we use for justifying an allowable on this well.

Q. All right. Exhibit 11?

A. Exhibit 11 is a combination of the two penalties previously described, both the standoff and the productive acres, and divided by 2, and that gets you to a 46-percent penalty.

I believe that that one was used recently in an OCD formula. We were reviewing past formulas, and this was from Order R-9925, July 22nd, 1993.

We feel there's additional circumstances on this one that don't -- that this formula needs to be modified a little bit to take it -- to put both wells on a level playing field.

Q. What's the problem you're trying to address? What is the position of the wells in relation to the reservoir that is the problem?

A. Well, the problem as we see it is that by Manzano going to an illegal location, they were able to penetrate a thicker portion of the reservoir, which gives them an unfair advantage on their deliverability.

When we get to my next exhibit, I can walk through how I came up with that conclusion.

Q. Let's do that.

A. For the formula that I described in --

Q. You're on Exhibit 12?

A. I'm on Exhibit 12.

For the formula that I showed on Marathon Exhibit Number 11, we feel that that needs to be -- the deliverability of the two wells needs to be normalized so that the penalty will be fair to Marathon.

If you go through Darcy's law and J equals productivity of a well -- and you can see the calculation there and what all the factors mean -- if -- All things being equal between the Manzano well and the Marathon well, which means permeability, temperature, viscosity, the z factor, the radius and such, everything is equal except the height, was the assumption that I made.

So therefore, if you go down to the bottom part of the page, it shows that based off of Darcy's law, the thicker portion of the reservoir has a higher deliverability than what the thinner portions do.

Based off of our maps, our calculations, we give them 90 feet; the Marathon well has 39 feet.

Simply dividing 90 by 39, the Manzano well

has 2.3 times the deliverability that Marathon's well enjoys.

Q. When this exhibit is captioned "Deliverability Normalization", how are you defining and using the word "Normalization"?

A. What I'm trying to show here is that since their well is illegal in a thicker portion of the reservoir, they have an unfair advantage over our well in that they have over two times the net feet open in their well of what we do.

So in a gas reservoir, directly proportional as Darcy's law shows here, that the more height you have, the more deliverability you have.

Q. Why should the penalty include a factor based upon the deliverability? Why should they not enjoy the fact that they've got a well that's got better capacity?

A. Well, you can make a lot of different examples on that, and -- an example from their maps or our maps, either one.

If you drill the well at a standard location, you don't get any reservoir at all.

If you drill it a few feet off of a standard location, you could penetrate 20 feet and maybe get a lower penalty.

If you drill a well as close as you can get to us -- and 660 feet is what they've drilled, and they've penetrated the -- over twice as much reservoir as what we did -- then their deliverability is twice as great, 2.3 times as great.

If they get a small penalty, one-third, then they've still beaten the system by being able to encroach, get a smaller penalty and have higher deliverability.

Q. How do you propose to factor in?

A. Let's move on to Exhibit 13.

Q. Okay.

A. I've shown it two different ways.

The first one is simply multiplying that factor which we described on the previous exhibit, the 39 feet over the 90 feet, by the Manzano productive acreage over Marathon's productive acreage. And when you work through the map, when you work through the map, that takes that 58-percent penalty down to a 25-percent penalty.

So if you allow the Manzano well to produce at 25 percent of its deliverability and Marathon's being in a legal location, no penalty, then they're closer to being a level playing ground.

Q. Let's turn now to Exhibit Number 14.

Identify and describe that display.

A. Number 14 takes it one step further. Step 13, there was no penalty in for the well being a -- encroaching on Marathon's lease, so this one adds that formula to it.

You can see the standoff, 660 over 1980. You can see it's added to the formula of productive acreage, and then it's multiplied by the deliverability calculation, the 39 over 90, and that takes the allowable to 20 percent.

Q. Okay. When you factor in the three components, the footage encroachment, the productive acreage in the reservoir and the deliverability of the offending well, how does that come out in terms of equity among the parties as they recover the gas from the reservoir?

A. This is a way to protect equity from Marathon's point of view, and I've got two more exhibits that will help us understand that when we turn to them.

Q. Okay, let's do that. Exhibit 15.

A. Exhibit 15.

Q. Describe for us how to read the display.

A. All this is showing is -- I went through a series of penalty calculations, the ones that we just

went through, and I have those on the left-hand column, the 58 percent through the 20 percent.

The center is the deliverability normalization. That's simply the 90 feet divided by the 23 feet.

If you multiply a 58-percent penalty times 2.3 times the deliverability, that normalizes the Manzano allowable to what the Marathon's well is capable of producing. So if they had a 58-percent penalty, they would be able to produce 132 percent of what the Marathon well could produce.

Q. You're dividing 90 by 39?

A. Yes.

Q. Okay.

A. A 46-percent penalty, which was the two-phase penalty -- it was the standoff and the acreage -- if that's the penalty that was put on Manzano, they still have the 2.3 times deliverability of what Marathon's well does, and that's essentially no penalty at all. It's 100 percent. They're on equal playing ground as far as deliverability, and that's not fair to Marathon, because we have more of the reservoir on our side of the -- on our proration unit than they do.

The third one shown is 33 percent. That was just a straight standoff, 660 over 1980. Same math,

times 2.3. Actuality, when you normalize it to Marathon's well, that's a 76-percent penalty.

Twenty-five percent, same math, times 2.3. That gets it close to where the penalty should be. That's 58 percent compared to Marathon's well.

The 20 percent that takes into account all three factors that we feel should be taken into account -- the acreage, the encroachment and the normalization to deliverability -- puts them at 46 percent production capability of Marathon's well.

Q. What is your recommendation for a penalty?

A. Twenty percent of allowable.

Q. Let's look at Exhibit 16 and have you show us the comparison of the penalty and how to apply that.

You know, you've come up with a percentage. Now, how do we make it work against the well?

A. Okay, the top portion of it, as Craig Kent testified, we don't feel that the calculated absolute open flow should be used in a deliverability formula or -- and we feel more that the actual deliverability of the well which we testified to as being 7.45 million feet a day is what should be used.

The first column on the left-hand side -- Let's look at the first three columns: the one that's labeled Calculated Absolute Open Flow, Allowable

Percent and Allowable MCF a day.

If their allowable percent was 100 percent of their calculated absolute open flow, they could produce up to 35 million cubic feet a day. That's physically impossible.

Using the same AOF, a 46-percent penalty, they could produce 16 million cubic feet a day. And we showed that that's not possible either, so there's no penalty there.

Thirty-five percent times a 33-percent penalty, they're at 11.6 million cubic feet a day. No penalty because their well can't produce that much.

The 25-percent penalty against the absolute open flow gives them 8.8 million, no penalty.

The 20 percent puts them down at 7 million, and that's still essentially no penalty from Marathon's point of view.

If you apply those same percentages to the fourth column, the deliverability that we've testified to is what the Manzano can produce based off of their four-point test.

A hundred percent, that gives them 473 percent -- I'm sorry, excuse me, the 473 percent is what the last column I just testified to, the 35 million, of what their actual deliverability is. So

the 35 million, that's 473 percent of what their well will deliver.

Sixteen million cubic feet a day, that's 218 percent of what their well will deliver.

Eleven million a day, that's 156 percent of what their well is actually capable of delivering.

Twenty-five percent penalty, that's 118 percent of what their well is actually capable of producing.

And the 7 million a day finally gets them down to an actual 5-percent penalty, 95 percent.

So if we drop on down to the bottom portion of that exhibit, that gets us down to the deliverability, and that's what Marathon feels that the penalty should be levied against.

If they were to drill the well at a legal location, they would have no deliverability.

We're not saying that they don't -- they aren't allowed to produce the reserves underneath their lease; we just want to make sure that our reserves under our proration unit are protected, and this will do it for us.

The deliverability is 7.45 million, an allowable percent of 46 percent, that lets them produce 3.4 million. That's still in excess of what we feel is

fair.

A 33-percent penalty gets down to 2.458 million.

Twenty-five percent penalty, 1.862 million.

Twenty-percent penalty, 1.49 million. And that's what Marathon recommends as the percent of allowable on the Manzano well.

MR. KELLAHIN: That concludes my examination of Mr. Tracy.

We would move the introduction of his Exhibits 9 through 16.

EXAMINER CATANACH: Exhibits 9 through 16 will be admitted as evidence.

(Thereupon, a recess was taken at 4:20 p.m.)

(The following proceedings had at 4:26 p.m.)

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Tracy, in coming before this Division and making recommendations as to a penalty to be imposed on the Manzano well, we're really talking about the potential for one tract or one well to drain the other tract and the other well; isn't that right?

A. Yes.

Q. And isn't what Marathon is proposing, what you're proposing, designed to assure, not that one gets

an advantage over the other, but each get their share?

A. Yes.

Q. Do you have an opinion as to whether or not the Jordan "B" Number 1 well, if there was no other well in the pool, would eventually drain the reservoir?

A. Yes, I have an opinion.

Q. And what is that?

A. It would.

Q. Would the same also be true if the Neuhaus alone was the only well in the pool? Would it ultimately drain the entire reservoir?

A. I'm sure it would.

MR. STOVALL: Please speak up, Mr. Tracy.

Q. (By Mr. Carr) As you've looked at the geological maps prepared by your geologist, if I understood your testimony, you acknowledge that there are some reserves under the Manzano tract?

A. Yes.

Q. And it is Marathon's position, is it not, that Manzano should be able to produce what is under their tract?

A. Yes.

Q. Now, if I look at your penalty calculations, if we look at Exhibit Number 9, this is just a -- this just shows the proximity to the lease line or the

difference between a standard location and the existing unorthodox location?

A. That's exactly right.

Q. It's not designed to in any way take into account reservoir quality?

A. No.

Q. And then we go to Exhibit Number 10, and this looks at the number of acres in the pool on the Marathon side of the line and compares those to those on the Manzano side of the line; is that correct?

A. That's correct.

Q. And this again wouldn't take into account differences in the quality of the reservoir, would it? This is just straight acres?

A. That's straight acres, exactly.

Q. So if some are on the flank, they're weighted just the same as those right in the heart of the reservoir?

A. That's true.

Q. Now we go to, then, your Exhibit Number 11, and basically what we're doing here is making a penalty recommendation by multiplying the distance from a standard location, the current location of the well, and are you multiplying that by the number -- the comparison of the number of surface acres in the pool?

A. No, what the exhibit shows is that -- the standoff penalty added to the acreage portion of the penalty and then divided by two.

Q. And that's --

A. What those two numbers are is 33 percent plus 58 percent, divided by two, for 46 percent.

Q. And again, using this formula we've never yet addressed the quality of the reservoir itself?

A. No, we have not.

Q. Now, we get to your Exhibit Number 12, and this is where you start addressing needing to equalize the thickness factor; is that fair to say? The difference in reservoir thickness on either side of the line?

A. Deliverability.

Q. Okay, so --

A. And deliverability as I've shown it is directly proportional to thickness. So if you're more comfortable using thickness, that's fine.

Q. Now, based on -- And yet in terms of thickness, is it not fair to say the only thing we actually know is that the thickness in the pay section in the Manzano well is twice or more than twice the thickness we have in the Jordan "B" Number 1?

A. Yes, and they got there by drilling

illegally.

Q. By drilling 660 from the lease line?

A. Correct, two-thirds encroachment from the state rules.

Q. If we look at Exhibit Number 13, here is where you are trying to -- Is this where you factor in deliverability?

A. Yes, it is.

Q. And it's because you say it's directly related to the net thickness, you can compare the 39 feet to the 90 feet, and that's how you're getting there?

A. That's exactly right. And from all the data that we have, that's how I came up with that.

Normally, or in a lot of other circumstances, when you get to a thicker, cleaner portion of the reservoir, probably your permeability also increases. So this is probably -- And if that happens in this reservoir, the Manzano well's permeability is higher than the Marathon's.

So there would be two factors that really give them an advantage over the Marathon well, both the perm and the height. But we're only taking into account the height because we don't know what their permeability is.

Q. And they have that advantage because they've got a better chunk of the reservoir in their wellbore?

A. They drilled into a better chunk of the reservoir, that's correct.

Q. And then we get to your Exhibit Number 15, and that's where you actually come out with a recommended penalty of 20 percent?

A. Yes.

Q. In your opinion, 20 percent -- they should be permitted to produce 20 percent of their deliverability; is that what you're recommending?

A. That's correct.

Q. And yet what -- And that is for a well that has two-times-plus the thickness of your well?

A. Where they drilled it in their proration unit.

Q. And it has 2.3 times the deliverability of your well?

A. Yes.

MR. CARR: Okay, thank you.

EXAMINATION

BY MR. STOVALL:

Q. I've got a question, Mr. Tracy. What are we trying to accomplish here again? Say that one more time.

A. We're trying to accomplish to -- What my objective is, is to protect the amount of reserves that are underneath Marathon's tract.

Q. Okay, and you're basing that on -- Let's use Marathon's geology, just for the moment, and essentially all of Manzano's reservoir is in the northeast quarter of their --

A. Okay.

Q. -- section, right?

A. Uh-huh.

Q. If they had simply laid down their proration unit, they really wouldn't be encroaching to the north, would they?

A. They didn't choose to do that, though.

Q. Well, I didn't ask you that; I just asked you if they laid it down they wouldn't be encroaching to the north. Please answer my questions, not yours.

A. Okay, yes.

Q. Now, they would, however, be unorthodox to the east a little bit at this location; is that correct?

A. That's true.

Q. By about 300 feet, roughly.

If that were the case, what kind of recommendations would you make in terms of penalty?

A. I'd go through the same calculations if I was the party to the east.

Q. What if you're the party to the north?

A. They're not illegal to us.

Q. Hmmm, interesting. But haven't they gained an advantage by moving into a -- According to Ms. Gholston's geology, they have gained, oh, it looks like 25, 30 feet of reservoir, by moving unorthodox east?

A. Yeah, and let me clarify my statement. We would -- I don't feel our position would be as strong, because we've been in those types of hearings before where someone diagonal from us was trying to oppose an unorthodox location.

Q. Yes, you have been in those, I can remember.

Now, just looking at it from a pure property standpoint, without any reservoir analysis, what -- one of the things Manzano has done by creating a standup as opposed to a laydown is, they now own a hundred percent of the proration unit; is that correct?

A. I don't know what --

Q. Based on their testimony?

A. Sure.

Q. And assuming, based upon their testimony, that the northwest quarter of the section is owned by somebody else, they would have had to share this well;

is that correct?

A. I imagine that's true.

Q. So they've gained 50 percent?

A. True.

Q. Could that be a basis for a penalty? Say penalize them 50 percent, make it look as if they were -- because the well location could have been orthodox? I mean, you start playing these games --

A. Not from an engineering point of view. I don't look at --

Q. From an engineering point of view, let me ask you, if that were in fact a laydown unit, we wouldn't be here right now, would we?

A. No, we'd probably still be here if they had encroached off to the east.

We would come in and say, They still have gained an unfair advantage by sliding their well over, getting into a thicker portion of the reservoir than what they could have from a legal location, be it standup or laydown.

Q. But in terms of capturing their share of the reservoir, then, what you'd say is, they could get -- their share of the reservoir becomes a whole lot more because they've changed the orientation of surface lines, even though they're in the same place in the

rock; is that correct?

A. I think --

Q. Just looking at the reservoir only, and forgetting about land ownership issues at the moment.

A. I think whatever is underneath the tract is probably there no matter where they drill the well, no matter how you draw the box.

MR. STOVALL: I don't have any other questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Tracy, Marathon has estimated the -- Do you know what the recoverable reserves are at this point in time in the reservoir?

A. I think we have them estimated at about 86 percent, which is slightly over 5 BCF.

Q. Did you do any calculations with regards to acreage-feet underlying each of the tracts?

A. Yes, we did.

Q. Do you believe that the penalty shouldn't be based on anything to do with acreage-feet?

A. We wouldn't have any opposition to doing that either.

Q. Do you have that with you?

A. No, did not bring it.

Q. Do you remember any of those calculations?

A. Sure.

Q. Do you know how much of the 5.0 BCF that's left are Marathon's and how much should be attributed to Manzano?

A. Well, I don't have it in BCFs. What I remember is that the acreage-foot calculation, compared to the acreage calculation that I'm showing, on the acreage calculation I'm showing that there's 58 percent, that Manzano has 58 percent compared to Marathon.

And if you do an acreage-feet calculation, I think that number increases in Manzano's favor by about four or five percent, something like that. So they're in the low 60s.

Q. Very similar to the acreage, straight acreage?

A. Similar, yes.

Q. Did you follow that up with production estimates that -- to show how much each company would recover at the proposed rates? At the proposed penalized rate, do you know how much gas Manzano would recover?

A. No, I didn't do that calculation.

What I did do, though, was the calculation

that you see on Exhibit 16, on what the allowable is, and on Exhibit 15 also, where they would get 46 percent on the 20 percent of what Marathon could recover, from point four.

Q. Based on an allowable of 1.5 million a day, do you know how much the Manzano well would ultimately recover?

A. No, I don't know that.

Q. Is that possible to calculate?

A. Sure.

MR. KELLAHIN: Would you like us to supply that calculation to you? We could do that after the hearing and submit it if you desire to know the result of the math.

EXAMINER CATANACH: I would.

MR. KELLAHIN: Okay.

Q. (By Examiner Catanach) I would also be curious to know how much the Marathon well would ultimately recover at its current rate.

A. Ultimately recover from point zero or from the time that they put their well on?

Q. From the time that the second well was drilled.

A. Okay, we can supply that.

EXAMINER CATANACH: I don't think I have

anything else.

MR. KELLAHIN: No questions.

EXAMINER CATANACH: The witness may be excused.

MR. KELLAHIN: That completes our presentation, Mr. Examiner.

We're ready to make closing statements if you like.

EXAMINER CATANACH: Okay.

MR. KELLAHIN: Mr. Carr and I have done this a number of years before you and other examiners, Mr. Catanach, and while it's always an interesting debate to talk about how you deal with the rectangles, with the 320 gas spacing for the deep gas wells and whether you stand them up or lay them down, almost universally the Division recognizes that that is the rule, that you have to stay 1980 away from in-boundary of these spacing units.

That's the system that we have, and that is the factor that is almost always universally applied to the penalty.

What's important to me in this case is how we got here. I know it grates on Mr. Stovall's nerves to talk about a precedent, but I've been searching my memory to find an example of where an operator

manipulates the system to his advantage.

The evidence to me says that Manzano has used and manipulated the system.

The system, as I understand it, is that if you're seeking an unorthodox gas well location, you come to the Division first and before you drill the well, a penalty is established for that location.

Manzano, for the Sims well, permits a deeper oil zone in the Strawn, some 600 or 900 feet deeper. And yet, when they get to the Wolfcamp and find that it's no good, they drop the Sims well and they come over south of Marathon again with another corner shot, at another nonstandard, illegal location.

Is the system going to award an operator for that strategy?

Are we now going to share this information with the industry to say, This is how you do it, so that you give the Examiner an accomplished fact, that you give him an expensive wellbore at an unorthodox location, and you dare them to do something about it?

I think Marathon's been generous with the penalty. Quite frankly, if it was left up to me, I'd let them produce this well till they got their costs back, and then we'd plug it. And I think that would set an example for the industry and this kind of

foolishness would stop.

What have they gained? They have gained a position in the reservoir that they could not otherwise achieve. They took the data they received from Marathon, used it to their advantage to get in the thickest portion of the reservoir.

And how do you balance the equities? I quite frankly don't know. I don't know what you do with an operator that comes before you and gets the approval of the Division director for an emergency allowable and then blatantly exceeds that maximum allowable. What do you do?

We would ask the Division to make it very clear what that letter says. My reading of that letter says that after today that well gets shut in. It's overdone, and that well stops producing as of five o'clock today. There is no language in that letter that allows them to produce beyond today. That's my reading and my understanding of that letter, and I hope that action is taken to accomplish the purpose of that letter.

There is a substantial difference of opinion with regards to the size, shape and position of the reservoir. There are some key differences here.

First of all, Mr. Craig Kent has done

hundreds of these types of calculations, and reviews these tests.

And the latest four-point test on this well, the offending well, he says, is a bust, that he wouldn't use that AOF as a benchmark in which to calculate a penalty if you decide to let this well produce.

We think it's only fair to apply it against the actual deliverability.

What is important to know is his testimony about how he has, as a reservoir engineer, seen the connection between the Jordan "B" 1 and the Jordan "B" 2.

The geologists for Manzano might want to ignore that, but the reservoir is talking between those two wells. There's been a pressure effect, one to the other, and the geologist has to draw those points, draws the container to honor the data, and Ms. Gholston has done that.

I quite frankly don't know what to suggest to you for a penalty. I think 20 percent of the actual deliverability against the pipeline is generous. If it was left up to me, we'd shut it in.

EXAMINER CATANACH: Thank you, Mr. Kellahin.

Mr. Carr?

MR. CARR: May it please the Examiner, Mr. Kellahin would love to rule on the case, but unfortunately for him, and maybe for you, that is your province, and you're the individual who's got to make the decision.

I've been admonished in the past for trying to stand before an Examiner who's a petroleum engineer, stand here as a lawyer, and try and argue the technical considerations in the case, and so I'm going to try and hold those to a minimum.

But I would suggest, Mr. Catanach, that as you evaluate what is before you, there are certain questions that you're going to have to come to grips with.

We do have, as Kellahin pointed out, very, very different interpretations in the reservoir.

Mr. Catanach, what we know, that isn't interpretive, is that the Manzano well has twice the pay, twice the deliverability, and is no closer to them than they are to us.

And I think when you start thinking about penalty, at that point in time, maybe we do get to the point where you are not supposed to do what lawyers do and hang up on where the surface lines fall what's happening in the reservoir. Because as Mr. Tracy said,

what's there in the reservoir, it's going to be produced no matter how you draw the box.

And so I submit to you that in your province in this whole proceeding is to look at this from the engineering point of view and look at what's really happening. Now, it may be unfair to just slot that to you, but I think when you -- I think that's unfortunately where it lands.

When you do, we hope you will note the geological presentation presented by Marathon shows 41 more feet of pay than anyone can show. The only place you find that is on the Manzano tract.

They talk about a debris flow, they stretched the reservoir to the north and they take it to where there's really poor reservoir quality.

But the only place we can truly show you there is outstanding reservoir quality is under the Manzano tract. And I'm sorry if Mr. Kellahin doesn't like, but what's there, by definition and by statute, we really do have a right to produce, and that's what we're here asking for.

And so I think it's critical that you take the engineering information and then you fit it within the statutory framework, because the statutory framework tells you that we have correlative rights, we

have an opportunity to produce what is under our tract, and the only hard facts are, thicker section, better well.

But more importantly than that, when you look at the Statute, you find that there's a -- and then the Rules -- there are provisions which tell you when you should impose a penalty.

The Rule does not say, Thou shalt not drill at an unorthodox location. It recognizes when you have squares and rectangles that are the public land subdivisions and you have wells that drill circles and ovals, that there are times when you need to drill at an unorthodox location.

And Rule 104-G says, Whenever an exception is granted, the Division may take such action as will offset any advantage which the persons carrying the exception may obtain over other producers. And then it says, By reason of the unorthodox location.

It's because you're closer. It's not because you have better reservoir under your tract.

We're 660 from the lease line, they're 660 from the lease line. We've got more than twice the pay, we've got more than twice the deliverability, and I submit at that point, you have to leap into wildly differing interpretations.

We submit to you that we have not gained an advantage in terms of looking at what we have under our property and what they have under theirs, and we are entitled in fact under the oil and gas system in New Mexico to produce it. We have a right to produce exactly what is there, and that's what we're here before you seeking.

Mr. Kellahin, about four weeks ago, wrote you a letter. It was in a case between Anadarko and Enron. And in that case he cited to you a case that was, he said, controlling in that situation, and I'm going to cite it to you now as controlling here.

It's Case 10,489, and that is a case where Yates was 330 feet from a BHP well that was back 660 feet from the lease line. And this Division found that either well alone could drain the reservoir, it found that the Yates location was in a better structural position than the standard location -- we're certainly there -- and it said Yates needs to drill offset drainage from BHP.

I submit that this is the controlling decision.

And I submit that when Mr. Kellahin stands before you and suggests that we are trying to manipulate the system to gain an advantage on someone

else, that an operator who comes in here and says the person equidistant from the political boundary between them in a reservoir where the other guy's got twice the well in terms of deliverability, twice of it in terms of pay, and that guy ought to only be able to produce 20 percent of his deliverability, I suggest that raises a question of who stands before you trying to manipulate the system.

I think the time has come for you to enter an order based on sound technical considerations, and then we think you should take those considerations and apply them to the Rule.

And Mr. Catanach, if you do that, you will permit this well to produce without a penalty.

EXAMINER CATANACH: Thank you, Mr. Carr.

(Off the record)

EXAMINER CATANACH: Mr. Carr, during the break Mr. Stovall and I have conferred with Larry Van Ryan, who's the Chief Engineer with the OCD and who was involved with Mr. LeMay in granting Manzano the temporary allowable.

It is Mr. Van Ryan's interpretation of the letter that the well should be shut in after today, should not produce until an order is issued in the case. That is the current standing of the Division.

MR. CARR: And would you -- I'm not saying we wouldn't immediately comply with this, but could we also have it in writing, Mr. Catanach?

EXAMINER CATANACH: Yes, you may.

MR. CARR: Thank you.

EXAMINER CATANACH: In addition, under the terms of one of the letters -- I don't know which one it was -- Manzano was required to submit daily production figures on the well after the testing period was complete. I would expect those in shortly.

MR. CARR: And I -- We, I think, agreed we will supply those, and we will.

EXAMINER CATANACH: Okay. We'll get you your letter.

Is there anything further?

MR. KELLAHIN: Do you desire draft orders in this case?

EXAMINER CATANACH: Yes, I do. Thank you for bringing that up, Mr. Kellahin.

MR. KELLAHIN: My pleasure.

MR. CARR: And when Mr. Kellahin and Marathon submit the calculation, we assume we'll have those at the same time they're submitted so that we can respond if we have any concern.

MR. KELLAHIN: That's always my personal

practice, Mr. Examiner, is keep opposing counsel informed.

EXAMINER CATANACH: Thank you, Mr. Kellahin.

There being nothing further in this case, Case 10,796 will be taken under advisement.

This hearing is adjourned.

(Thereupon, these proceedings were concluded at 4:56 p.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 August 23rd, 1993.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10796, heard by me on August 19 1993.

David R. Catanach, Examiner
Oil Conservation Division