STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	
APPLICATION OF CROSS TIMBERS OIL COMPANY FOR AN UNORTHODOX GAS WELL LOCATION AND SIMULTANEOUS DEDICATION, SAN JUAN COUNTY, NEW MEXICO	CASE NOS. 12,098
APPLICATION OF CROSS TIMBERS OIL COMPANY FOR AN UNORTHODOX GAS WELL LOCATION AND SIMULTANEOUS DEDICATION, SAN JUAN COUNTY, NEW MEXICO	12,099
APPLICATION OF CROSS TIMBERS OIL COMPANY FOR A NONSTANDARD SUBSURFACE GAS WELL LOCATION/PRODUCING AREA AND FOR SIMULTANEOUS DEDICATION, SAN JUAN COUNTY, NEW MEXICO	and 12,100 (Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

December 17th, 1998
Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, December 17th, 1998, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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December 17th, 1998
Examiner Hearing
CASE NOS. 12,098, 12,099 and 12,100 (Consolidated)

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A P P E A R A N C E S

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FOR THE UTE MOUNTAIN UTE TRIBE:

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ALSO PRESENT:

GORDON HAMMOND
Energy Director
Ute Mountain Ute Tribe

* * *

WHEREUPON, the following proceedings were had at 8:45 a.m.:

EXAMINER CATANACH: At this time we'll call Case Number 12,098.

MR. CARROLL: Application of Cross Timbers Oil Company for an unorthodox gas well location and simultaneous dedication, San Juan County, New Mexico.

EXAMINER CATANACH: Call for appearances in this case.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing the Applicant. I have three, and maybe four, witnesses to be sworn.

I would ask at this time that this case be combined with the next two cases and that they all be heard together.

EXAMINER CATANACH: At this time we'll call Case 12,099.

MR. CARROLL: Application of Cross Timbers Oil Company for an unorthodox gas well location and simultaneous dedication, San Juan County, New Mexico.

EXAMINER CATANACH: And Case 12,100.

MR. CARROLL: Application of Cross Timbers Oil Company for a nonstandard subsurface gas well location/producing area and for simultaneous dedication, San Juan County, New Mexico.

EXAMINER CATANACH: Call for additional appearances in any one of these cases.

MR. SIMON: Mr. Examiner, my name is Jerry Simon. I'm a petroleum consultant to the Ute Mountain Ute Tribe. Also appearing here with me is Mr. Gordon Hammond, the new energy director for the Ute Mountain Ute Tribe.

Also, we'd like to apologize to Cross Timbers and to yourselves that one of our other representatives, a trustee for the Tribe, for some reason or another, just couldn't appear here today. And we would like an opportunity to question the witnesses, if we might.

And I also was wondering if it would not be a lot easier to follow if these cases were tried individually instead of combined. We have very little knowledge -- we just received exhibits this morning -- and it might be a lot easier for us to follow if they were put on separately.

MR. BRUCE: Mr. Examiner, if I may. When it comes -- the land matters are all pretty similar, and we jut have one land plat for the land matters.

As to the individual cases, we will discuss geologically each well separately, so...

MR. SIMON: That would be fair enough, I think. We'd appreciate that very much, sir.

EXAMINER CATANACH: Okay.

MR. CARROLL: Mr. Simon, would you prefer sitting

at the table to look at the maps?

EXAMINER CATANACH: Feel free to sit up here, Mr. Simon.

MR. SIMON: Okay. Do we have a chair for Mr. --

MR. BRUCE: Right here.

MR. CARROLL: Mr. Bruce, did you receive a copy of this December 16th letter from the BLM?

MR. BRUCE: No, I didn't.

MR. CARROLL: Maybe you'd like to take a look at it before we begin.

Mr. Simon, I take it you've got a copy of the December 16th letter?

MR. SIMON: No, sir, I do not.

MR. CARROLL: Well --

EXAMINER CATANACH: Maybe we should make copies.

MR. CARROLL: -- I'll make copies for both parties.

MR. SIMON: I apologize for that also, but we don't have a copy.

EXAMINER CATANACH: That was just faxed to me this morning by BLM, and --

MR. SIMON: Oh --

MR. CARROLL: Just let me make copies of that.

(Off the record)

EXAMINER CATANACH: Will the witnesses please

stand to be sworn?

(Thereupon, the witnesses were sworn.)

WIN RYAN,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence?

A. My name is Win Ryan. I'm from Fort Worth, Texas.

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

A. I'm a petroleum landman, and I work for Cross-Timbers Oil Company.

Q. Have you previously testified before the Division as a landman?

A. Yes, I have.

Q. And were your credentials accepted as a matter of record?

A. Yes.

Q. And are you familiar with the land matters involved in these three Applications?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Ryan as an expert petroleum landman.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Ryan, what is it that Cross Timbers seeks in these cases?

A. We're seeking -- This is to drill three wells and to seek unorthodox location exceptions and simultaneous well dedications.

Q. Okay. Now, two of these wells, the primary zone is the Dakota; is that correct?

A. That's correct, the Dakota and the Morrison.

Q. And in one of the wells the primary or the first zone that you will test is the Paradox?

A. That's correct, and that's the Ute Indians A Number 26 well.

Q. Okay. Well, let's refer to your Exhibit 1. Could you identify that for the Examiner?

A. Okay, this is a land -- nine-section land plat of the Ute Mountain Ute Tribe leases that cross timber zones.

The 160-acre spacing units are for the Dakota formation, and then the 640-acre hashed outline in Section 2 is for the Paradox formation.

Q. Okay. Where are the proposed wells located?

A. Okay, the first well, the Ute Mountain Tribal J Number 6 well, is located in the southwest quarter, southwest quarter, of Section 1, 31 North, 14 West.

The Ute Indians A Number 26 well is located in the southwest quarter -- or southeast quarter of Section 2,

31 North, 14 West.

And the Ute Indians A Number 27 is also in the southeast quarter of Section 2, 31 North, 14 West.

Q. Now, these -- this land you have in yellow, is that all Ute Mountain Ute land?

A. That's all Ute Mountain Ute Tribe minerals, and it's all Cross Timbers Oil Company leasehold, 100 percent.

Q. All right. So as a result, there's no need to notify any offset working interest owner regarding these Applications?

A. That's correct.

Q. And by the same token, the sole royalty owner is the Ute Mountain Ute nation, is it not?

A. Yes, that's right.

Q. Okay. So regardless of the simultaneous dedication and the unorthodox location, there's no royalty owner adversely affected?

A. No, there is not.

Q. Okay. Now, let's go into a little more detail. As to the Dakota, what is the well spacing?

A. It's 160 acres, with wells no closer than 790 feet to the outer boundary of the well unit.

Q. Okay.

A. And that is the same for the Morrison also.

Q. Okay. Now, these are in the Ute Dome-Dakota Gas

Pool?

A. Ute Dome-Dakota Gas Pool.

Q. What about the Paradox?

A. And the Paradox is in the Ute Dome-Paradox Gas Pool, which is space don 640 acres, with wells no closer than 1650 feet to the outer boundary of the unit.

Q. Okay. Now, looking at Exhibit 1, let's first discuss the well in the southwest quarter of Section 1, which is Case 12,098. Could you identify the proposed and existing wells in that unit?

A. Okay, the propose well is the Ute Mountain Tribal J Number 6 well. It's to be located 450 feet from the south line and 500 feet from the west line, which will require an unorthodox location.

Then there's an existing Ute Mountain Tribal J Number 1 well, located up in the northeast quarter of the southwest quarter, which actually produces zero MCF of gas per day.

And then the Ute Mountain Tribal J Number 4 well in the northwest quarter of the southwest quarter, which is also a Dakota well producing 83 MCF of gas per day.

Q. Okay. Is this unorthodox location based on geology?

A. Yes, it is.

Q. Okay. Now, let's move to the first well in

Section 2, and this is Case Number 12,100, and describe Cross Timbers' proposal for the A well Number 26.

A. Okay, this is -- we're seeking to drill this well to the Paradox formation. The surface location will be 570 feet from the south line and 1045 feet from the east line, with a bottomhole location of 850 feet from the south line and 1450 feet from the east line. Therefore, the bottomhole location for the Dakota and Paradox will be the same. Therefore, we'll need an unorthodox-location exception for the Paradox, but not for the Dakota formation.

And then we'll need a simultaneous well dedication for the Dakota, because there is the existing Ute Indians A Number 20 well, which is about in the center of the southeast quarter of Section 2.

Q. Okay.

A. And also there's a proposed well, the Ute Indians A 27, in the northeast of the southeast of Section 2.

Q. Okay. Now, once again, the reason for the bottomhole location being unorthodox in the paradox is geological?

A. It's geological and topography also. We have to directionally drill the well.

Q. Okay. The surface location is unorthodox because of topography?

A. Yes.

Q. You've already mentioned the existing Dakota wells. What about -- There is an existing Paradox well in Section 2, is there not?

A. Yes, the Ute Indians A Number 7 well, located in the southeast quarter of the northwest quarter. If we're successful with this well, we will shut in that well, which is --

Q. Okay, so there's no reason for simultaneous dedication in the Paradox?

A. That's correct.

Q. Now, then, Case 12,099 regarding the A well Number 27, what will be the location of that well?

A. That well is located 2600 feet from the south line and 1000 feet from the east line.

Q. And again, because of the number of Dakota wells in the quarter section, you will need simultaneous-dedication approval?

A. That's correct.

Q. And what is the reason for that unorthodox location?

A. That is also based on geology.

Q. Okay. Now, these Applications were set for hearing. They were -- Documentation was filed with the BLM and the Ute Mountain Utes for these wells?

A. Yes, that's correct.

Q. Including this land plat?

A. Well, it was actually somewhat different.

Q. A similar land plat?

A. Yes.

Q. And with geological information also?

A. Yes.

Q. Okay. Was Exhibit 1 prepared by you or under your direction?

A. Yes, it was.

Q. And in your opinion, is the granting of these Applications in the interest of conservation and the prevention of waste?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibit 1 into the record.

EXAMINER CATANACH: Exhibit Number 1 will be admitted as evidence.

Mr. Simon, do you have questions of this witness?

MR. SIMON: Yes, sir, just one question.

EXAMINATION

BY MR. SIMON:

Q. Do you recall the date that you filed this information with the BLM?

A. Yes, on November 16th of 1998. And I believe it

was overnight into the BLM.

MR. SIMON: Okay, thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. Okay, I just want to make sure I get this straight. Starting with Section 1, southwest quarter, you're drilling the J Number 6, which will be a Dakota well?

A. Yes, sir. Dakota and Morrison.

Q. Now, is that the same pool, the Dakota and the Morrison? Do you know?

MR. BRUCE: Mr. Examiner, I looked that up and I could not determine that from the Division's records. I presume that -- Some of these wells out here may be producing from the Morrison, and I think the geologist may be able to affirm that, but I couldn't locate anything in the orders creating these pools which would state whether they included the Morrison, so I'm presuming that it would be a separate pool.

EXAMINER CATANACH: But you couldn't find an existing Morrison pool?

MR. BRUCE: I could not.

EXAMINER CATANACH: Well, I'll ask the geologist.

Q. (By Examiner Catanach) You've got -- Within that southwest quarter of Section 1, you've got the Number 1

well and the Number 4 well.

A. That is correct.

Q. They're both Dakota wells?

A. Yes.

Q. Are those Dakota and Morrison wells, do you know, or are they just Dakota wells?

A. I'm not sure. I'm sure the geologist or engineer will better answer that.

Q. The unorthodox location for the J 6 is based on geology?

A. Yes.

Q. Okay. So you want to dedicate that southwest quarter to all three of those, the 1, the 4 and the 6?

A. That's correct, yes, sir.

Q. Okay. Section 2, the A 26 is going to be drilled as a Paradox well?

A. That's correct.

Q. And Dakota?

A. Well, the Dakota would be -- If the Paradox is successful, we'll leave the Dakota behind pipe.

Q. Will the Dakota eventually be produced in that well?

A. I would assume eventually.

Q. Are you seeking with this Application to have that well designated as a Dakota well, or is that not

included in this Application?

A. As a simultaneous well dedication, yes, we are.

Q. It is?

A. Yes.

Q. Okay. That well is to be directionally drilled?

A. That's correct.

Q. Due to -- The surface location is due to topographic?

A. Yes.

Q. And the bottomhole location is due to geology?

A. Geology.

Q. And you currently have a Number 20 that's an existing Dakota well?

A. Yes.

Q. Do you know what that produces?

A. That well, I do not know what it produces.

Q. Okay, that is a producing well at this time, though, right?

A. Yes.

Q. So those three wells will be dedicated to the southwest quarter --

A. Southeast quarter.

Q. Sorry, southeast quarter. That's the 26, 27 and the 20 in the Dakota?

A. Yes, sir.

Q. All right. Now, let's talk about the -- Well, the 27 is going to be drilled as a what?

A. As a Dakota-Morrison well.

Q. Not Paradox?

A. No, sir.

Q. Okay. And that -- And it's again based on geology?

A. Yes.

Q. Okay. So there's an existing Paradox well, being the Number 7, which is dedicated to all of Section 2?

A. That's correct.

Q. So that well, the Number 26, will be dedicated to that 640?

A. Well, we actually will shut in that Number 7 well if the Paradox is successful in our Number 26.

Q. So you're not seeking simultaneous dedication for a 640?

A. That's correct.

Q. This area that you've outlined in yellow, this is this a single lease?

A. No, that's probably two or three leases.

Q. Okay, the area in question, the proration units in question, is that a single lease?

A. Yes. Well, the Ute Mountain -- The southwest quarter of Section 1 is a separate lease than Section 2.

Q. Okay. And the working interest ownership is 100-percent Cross Timbers?

A. Yes, sir.

Q. And the only royalty interest owner is the Ute Mountain Tribe?

A. That's correct.

Q. Do you know if that is somehow split among different allottees? Is that the way it works?

A. No, this is all tribal lands.

Q. Okay, so a hundred percent of the royalty goes to the Tribe, and you don't know how it's distributed from there? I mean, it just -- It all goes to the Tribe, right?

A. It's -- I mean, our -- we paid it, one entity.

Q. Are there other Dakota -- I'm trying to get a handle on how big these pools are. Do you know, or what's the extent of production in this area? Is this just a small portion of the pool?

A. Well, I'm not sure how much -- Probably the engineer could tell you better where exactly all the Dakota production is in the area. I know Burlington has some, either to the northwest or somewhere.

Q. On the -- Do you know if you have prior authorization in the southwest quarter of Section 1, where you dedicated the Number 1 and the 4 well to that unit?

A. Well, we acquired these from Amoco about a year

and a half ago. And they did this same type program, infill drilling, and they received simultaneous well dedications from the NMOCD, and I would assume that was one of the wells.

Q. Okay, you can't put your -- You can't reference the orders that approved those?

A. No.

EXAMINER CATANACH: Anything else of this witness?

MR. CARROLL: I have a couple questions.

EXAMINATION

BY MR. CARROLL:

Q. You stated that the information had been filed with the BLM on November 16th?

A. Yes, sir.

Q. Was that just the Application, or was that exhibits, or what was filed with the BLM?

A. It was everything that was filed with the NMOCD also, an application with the BLM, along with the exhibit.

MR. BRUCE: What was filed, Mr. Carroll, was an application signed by Mr. Ryan, a land plat somewhat like this, a Dakota structure map which will be presented today, a Paradox structure map which will be presented today, and a geologic write-up by the engineer, Mr. Burch.

Q. (By Mr. Carroll) And all that same information

was supplied to the Tribe at that time?

A. Yes, it was -- I made about 150 copies, I think. To the NMOCD here, the NMOCD in Aztec, the Ute Mountain Ute Tribe, and the Koyak, the BIA, and to the BLM in Durango.

Q. Okay. And did you have any meetings with the Tribe prior to that time, or --

A. No.

MR. CARROLL: That's all I have.

EXAMINER CATANACH: Mr. Simon, did you have another question?

MR. SIMON: Yes, Mr. Examiner, I'd like to ask one question here.

FURTHER EXAMINATION

BY MR. SIMON:

Q. Where is the -- As close as you can tell now or predict now, where will the bottomhole location of Number 26 be?

A. It should be approximately 850 feet from the south line and 1450 feet from the east line.

Q. 1040 feet?

A. 1450.

Q. 1450 feet. From the north line?

A. No, from the east line.

Q. I'm sorry. East line, okay. That would probably be for your Paradox?

A. And the Dakota. The geologist could probably explain it, but he explained to me where once it gets to the top of the Dakota, it's going to go straight down.

Q. Oh, okay, it's going to be a straight hole after you hit the --

A. Once we hit the top of it, yeah.

MR. SIMON: Okay, thank you very much.

EXAMINER CATANACH: This witness may be excused.

THE WITNESS: Thank you.

GARY BURCH,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence?

A. My name is Gary Burch, and I reside in Arlington, Texas.

Q. By whom are you employed and in what capacity?

A. I'm employed by Cross Timbers Oil Company as a geologist.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Would you please briefly describe your

educational and employment background?

A. Okay, I have a master of science degree in geology from Texas A&M University in 1984. That same year I went to work as an exploration geologist with Sun Exploration and Production Company. That company became Oryx, and I remained there until 1991.

In 1992 I became employed by Cross Timbers Oil Company as a geologist, and I've been in that capacity since.

Q. Does your area of responsibility include the San Juan Basin?

A. Yes, it does.

Q. And are you familiar with the geologic matters involved in these three Applications?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Burch as an expert petroleum geologist.

EXAMINER CATANACH: Mr. Burch is so qualified.

Q. (By Mr. Bruce) Now, Mr. Burch, let's go through these Applications. And Mr. Examiner, these exhibits, the next series of three or four exhibits are marked on the back.

Let's first discuss the Ute Mountain Tribal J Number 6 well in the southwest quarter of Section 1. What is Exhibit 2?

A. Exhibit 2 is a structure map on the top of the Dakota formation. It is based on a 3-D seismic survey that Amoco shot in 1995 and was reprocessed and re-interpreted by Cross Timbers, and is also based on structural well control. The two have been tied in together to come up with this structure map.

On the structure map there are some faults that are shown on the seismic lines that are oriented roughly east northeast to west southwest across the area. The Dakota wells, the current producing Dakota wells, are shown encircled. The contours are on 25-foot contour intervals.

Q. Overall, could you describe the Dakota geology in this area?

A. Okay. The Dakota produces over a large area in here. It's called the Ute Dome structure. It's also the producing structure that the Paradox formation produces on. The overall size of the structure is about a township in size, and within the overall larger structure there are several of these faults, as I alluded to earlier, cutting across the southern end of the structure.

These faults act as trapping mechanisms for hydrocarbons migrating up out of the Basin, which lies to the southeast. You can see on the map the structure falls off very rapidly in the southeast of Section 12, as you go off into the San Juan Basin.

Q. Now, Mr. Burch, you mentioned the faults which are, let's just say, roughly east-west in this area, are they not?

A. Yes, they are.

Q. And are these relatively dark straight lines that you have trending across this map?

A. Yes, they are. The black lines are faults which are upthrown to the south, and the red lines are faults that are upthrown to the north.

Q. What is the vertical displacement along these faults?

A. It can range upwards to probably about 250 feet of vertical displacement.

Q. Okay. Now, let's discuss the faulting with respect to the Tribal J Number 6 well. First, with respect to the unorthodox location, why do you want that well there?

A. Based on our seismic data, there is a fault block in the southwest corner of Section 1, which extends westward into the southeast of Section 2, where you have a closed structure bounded on the north by a down-to-the-north fault. This structure has not been tested.

These structures have been proven productive from the lower Dakota and Morrison sandstones on other similar structures in the area, most notably in the -- the present

well in the southwest quarter of Section 1 is up on a very similar fault block. It's separated from the proposed well by a fault. Therefore, the proposed well would not compete with that well for any reserves.

But that well -- You were asking if there was any Morrison production. Amoco defines that well in the southwest of Section 1 -- it's the Number 4 well -- as producing from the Morrison. So that's an example of Morrison production.

When you get off of these small, closed structures, the Morrison is typically wet, and so that's why we want to get on the very tops of these little structural fault blocks.

Q. So number one, you need to be structurally high?

A. Yes.

Q. And number two, the J Number 6 well is unorthodox because you're trying to move south of that fault?

A. That's correct. With the fault acting as a trap, the reserves on that fault block to the south of that fault cannot be accessed by the existing well, and that's the reason for the simultaneous well dedication.

Q. And again, you said the existing Number 4 well, the one circled in yellow to the north of the proposed well, is not accessing the reserves south of that fault?

A. That's correct.

Q. Do these faults act as permeability barriers, or can they?

A. Yes, they do, and the way they do that is, you're faulting the Dakota, permeable Dakota sandstones, up against the tight Granero shales. Therefore the hydrocarbons cannot migrate into the shales because they're just too tight.

Q. Okay. And once again, because of this faulting, even though you have a simultaneous-dedication request, these two wells, these two Dakota wells in the southwest quarter, the Number 4 and the Number 6, will not be competing for the same reserves?

A. That's correct.

Q. Okay. And once again, there is another well, the Number 1 well, in the southwest quarter, but that well is currently not producing?

A. That well is inactive, and I believe the Number 4 well was actually drilled as a replacement for the Number 1 well. I don't think they were both ever active at the same time.

Q. Okay. Now, let's move on to the Cross Timbers proposal for the A Number 26 well. Now, you have two exhibits for this well, Mr. Burch. They're marked 3 and 3A. Just for purposes, to explain, Exhibit 3 is the same geological map as Exhibit 2, is it not?

A. Yes, it is.

Q. And the only difference is some of the labeling on there?

A. That's correct.

Q. Okay. Now, this well will be drilled to test the Paradox; is that correct?

A. Yes, it will.

Q. And it is being drilled as a replacement well for the Number 7?

A. That's correct. The Number 7 well was drilled back in 1955, and it produced over 9 BCF of gas from the Paradox.

In 1983 the Number 7 well production rate suddenly dropped from about 600 MCF a day to about 40 MCF a day, and several workovers have been attempted on that well to try to get the production back up to where it should be, and none of them have been successful. And our engineers have calculated that there's a substantial amount of gas that that well has failed to recover within the section.

Q. Okay. Moving on to your Exhibit 3A for a minute, could you maybe give a little broad description of the Paradox geology in this area?

A. Okay, the Paradox produces on the top of the Ute Dome structure, very similar to the Dakota, only there are no small faults bisecting the overall larger structure.

The exhibit is a structure map on the top of the Akah formation, which is a member of the Paradox, and the wells circled in blue are wells that currently produce from the Paradox.

Q. Are there different producing intervals in the Paradox?

A. Yes, the Paradox is actually a group name. It's composed of several formations. Those would be, in ascending order, the Alkali Gulch, the Barker Creek, the Akah, the Desert Creek and the Ismay. And all of those formations produce on the Ute Dome field.

Q. Are these separate zones vertically communicated?

A. The literature suggests that they are separate zones, that each one has its own individual gas-water contact.

Q. Now, looking just at the Paradox, why was this bottomhole location chosen for the replacement well?

A. There's basically three reasons why we wanted to test the Paradox down here in the southeast of 2.

Number one, as I stated, because the production in the existing well was never able to be brought back up to where it should be, there were -- that well did not recover all of the reserves in the section that it would have normally recovered. And like I said, it made over 9 BCF of gas. And to recover the remaining reserves in the

section, we wanted to get a fair distance away from the existing well, because it's probably depleted a large part of the -- or -- if not all of the northwest quarter of Section 2. So if there were any reserves remaining in Section 2, it's likely to be down in the southeast quarter.

Additionally, the proposed location is on the edge of the Dome where you go from relatively flat-lying strata at the top to steeply dipping strata off to the southern flank, and that forms a kind of a flexure point. And what you see along these flexure points is increased fracturing because of tensional forces created by the folding of the rocks. So we feel that the southeast quarter of Section 2 would be the most highly fractured part of the section. And fracturing plays a very important role in the productivity of these wells.

The third reason for putting the well in the southeast of 2 is that the well in Section 11, the Paradox well in Section 11, encountered a carbonate buildup that none of the other Paradox wells in the field have encountered. It's a zone that's unique to that well. And based on the depositional environment, I feel that the buildup that's seen in that well in Section 11 is likely to trend into the southeast part of Section 2, and we want to try to find the porosity trend that that Section 11 well had, because it is by far the best well in the field.

Q. Now, as far as the surface location of this well, is that based on topography, or are there...

A. Yes, it is. We wanted the surface location to be 850 from the south and 1450 from the east, but because of topography we were not able to put it there. The closest location, the closest surface location to that spot that we could find is the one that we have presented here, and that is 570 from the south and 1045 from the east.

Q. Now, let's discuss the Dakota geology at this particular location.

If you look at your Exhibit 3, which, as I said, is the same geology depicted on Exhibit 2, once again, you will be -- if I can put words in your mouth -- you're going to be south of the fault but at a structurally high location?

A. That's correct. The Number 20 well from both log tops and seismic data confirmed that that well was on the downthrown side of the fault. It's very low structurally. It was not even drilled into the Morrison formation. If it would have been, it likely would have been wet.

We're wanting to test the Morrison and the Dakota sands on the upthrown side of the fault block.

Q. And because, again, the Number 26 well will be fault-separated from that Number 20 well, there won't be any competition for reserves; is that correct?

A. That's correct.

Q. Okay, let's move on to your final exhibit, Mr. Burch, Exhibit Number 4. It's another Dakota structure map. It's the same Dakota structure map, just with different labeling for the 27 well, is it not?

A. Yes.

Q. Could you discuss for the Examiner why Cross Timbers wants to drill this well? What is the geological basis for it?

A. Again, this is a very similar type of circumstance as the other two Dakota wells. We're testing a small, faulted structural closure that extends from the center of the east half of Section 2 into the northwest of the southwest of Section 1.

As I stated before, the existing Dakota well, which is the Number 4 well, has proven already productive from the lower Dakota and the Morrison sandstones on this fault block, and we're just looking to offset that well along the same fault block in Section 2.

Q. So what you hope to do is duplicate the J Number 4 well over to the east and not the Number 20 well to the south of this proposed well?

A. That's correct, we should be well updip of the Number 20 well.

Q. Will you be competing for reserves with the

Number 20 well in the southeast quarter of Section 2?

A. No, we should not.

Q. Mr. Burch, were Exhibits 2 through 4 prepared by you or under your direction?

A. Yes, they were.

Q. And in your opinion, is the granting of these three Applications in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender the admission of Cross Timbers Exhibits 2 through 4.

EXAMINER CATANACH: Exhibits 2 through 4 will be admitted as evidence.

Mr. Simon, do you have any questions?

MR. SIMON: Yes, Mr. Examiner.

EXAMINATION

BY MR. SIMON:

Q. On your Exhibits 2 and 3, which are somewhat identical as I look at them, the contouring here reflects what?

A. This reflects the subsurface structure at the top of the Dakota formation.

Q. At the top of the Dakota. And what --

A. It's not shown here, but it should be in feet above sea level.

So for example, if you see a 3700 contour, that means the top of the Dakota is 3700 feet above sea level at that contour.

Q. Okay. But we're keying in on the Dakota.

A. Yes.

Q. Okay. And the faults that you have here running east and west also are related to faulting in the Dakota?

A. Yes.

Q. Okay. Let's take -- I guess it's Exhibit 2. In the southeast quarter of Section 2 you have a well with a yellow circle around it?

A. Yes.

Q. That is a Dakota producer?

A. Yes. It's currently only making about 9 MCF a day. It's a very poor well.

Q. And right south of that producer is a fault line; is that correct?

A. That's -- Yes.

Q. In the southwest quarter of Section 2, you also have another well with a yellow circle around it?

A. Yes.

Q. That's a Dakota well?

A. Yes.

Q. Okay. That well is not in the same fault block as the previous one we talked about?

A. No, it's not. There's a little bit of an error on this map.

That well symbol for that well in the southwest corner of 2 should be on the south side of that fault, and it's shown on the map as being just off to the north side. But it's on the south side of that fault.

Q. It's on the south side of the fault.

A. Yes.

Q. So you're inferring, then, that the fault line associated with the second one I mentioned, as well as the fault line associated with the first well, there are no wells in that fault block?

A. That's correct.

Q. Let's jump up to the northwest corner of Section 2. There are two wells with yellow circles around them?

A. That's correct.

Q. Are those wells in the same fault block as the well in the in the southeast corner of Section 2?

A. No.

Q. They are separate?

A. Yes.

Q. Okay. Bottomhole pressure data, I assume, will be discussed by your engineer?

A. I believe so.

MR. SIMON: Okay, thank you very much.

EXAMINATION

BY EXAMINER CATANACH:

Q. With regards to the 26 well, you mentioned that there were some topographic considerations. Can you discuss those?

A. It's hard to discuss without showing the map, but there's a pretty good hill sitting right there where we wanted the surface location to be. We just could not build a location up there. We had to get off the crest of that hill.

MR. BRUCE: Mr. Examiner, we do have a topographic map marked Exhibit 7.

THE WITNESS: This is a really crude exhibit, but it was our work map.

You see in the southeast of 2 there's a black dot with an arrow on it and the letters "LOC" below it. That's where we wanted the location to be, ideally, from the geology.

The yellow-highlighted dot is where the actual surface location will be. That first location fell on the top of that little mountain or hill or whatever you want to call it. It's very rugged. We actually went out there and confirmed there's no way we could build a location there.

Q. (By Examiner Catanach) Does BLM work with you in conjunction on these locations?

A. I am not sure if the BLM has approved our staked location or not.

MR. RYAN: I'm not sure, but I believe they do meet with them to go out there.

EXAMINER CATANACH: Did you have something else?

MR. SIMON: Mr. Hammond might be able to answer that question.

MR. HAMMOND: Just going to say that the BLM, the BIA and the Tribe were there when they did stake the locations.

EXAMINER CATANACH: Okay. So the BLM and the tribe are in concurrence with the locations they've chosen; is that correct?

MR. HAMMOND: Yes, sir.

Q. (By Examiner Catanach) The Number 26, again, that's going to be the Paradox test. Do you know what intervals in the Paradox you're going to be completing the well in?

A. We're going to test all of the intervals, but we won't know which ones we'll complete in until we test them, so...

Q. Is the --

A. But ideally, we would like to complete in all of them.

Q. Is the Number 7 well produced -- Did that produce

from all of the intervals?

A. I believe it did.

Q. And that whole Paradox interval is all within a single pool; that's not broken up like it is in the Barker Dome?

A. Right, as of now, it's all a single pool.

Q. On your Exhibit 2, I see a -- in addition to the J 6 well where there's a red circle, there's a red circle down in Section 12 south of there. Is that another proposed location?

A. That is a proposed location for a Paradox well that we were only seeking an unorthodox location for. Since there's no existing Paradox well in Section 12, we did not need a simultaneous well dedication, and I believe that unorthodox location was approved administratively.

Q. So it's your testimony that a portion of that southwest quarter did not adequately drain the Dakota formation? A portion was not adequately drained by the Number 1 and Number 4 wells; is that right?

A. Yes, yes.

Q. Do you know what the plans are for the -- Is it the Number 1 well that's inactive?

A. Yes, it's currently inactive in the Dakota.

Q. Do you know what's going to be done with that well?

A. No, I don't.

Q. And the Number 27, you've got a similar situation as far as drainage, which is a portion of that proration unit, was not drained by the existing Number 20 well; that's your testimony?

A. Yes.

Q. Due to the presence of that fault block?

A. Yes.

Q. And that unorthodox location is necessary to be on the north side of that fault. And is that a structurally high position in that area there?

A. At the Ute Indians A 27, yes, that little black contour that's just right on top of the -- or just right above the well symbol --

Q. Uh-huh.

A. -- is a 3900-foot contour. And the existing Number 20 well is below the 3700-foot contour. So we should expect to be about 200 feet updip, or high, to the Number 20 well.

Q. Okay. Back to the Number 6, how much structural position are you gaining with that well?

A. The Number 6 well? Well, we expect the top of the Dakota to be a little bit above 3700 foot. We're not gaining structural elevation to any well, because there's no other well in this fault block. So it will be the first

test of this fault block.

Q. With regards to the Paradox unorthodox location, what tools can you use to determine where the flexure point is within that reservoir, or what data have you used to locate that?

A. That's just based on our seismic data and the well-control data. And it's just simply where you see a change in depth.

On a contour map, for example, it would be from widely spaced contours to closely spaced contours, where you see that change is what I'm calling the flexure point or the flexure line. And typically that's where you expect the most fracturing.

Q. So that's not anything specific that you can point to; it's just in that general area of the southeast quarter --

A. Right.

Q. -- that you're referring to?

A. Right.

Q. Explain to me again the significance of the carbonate buildup in the Number 11 well. Was that in the Paradox formation?

A. Yes, it's in the basal part of the Ismay formation, or the Ismay member of the Paradox.

There's about a 75-foot thick porous buildup in

that well that I do not see in any other Paradox well on this structure. And reading up on the depositional history of the area, it is my opinion that if we were to catch that porosity zone in any offsetting location, that the southeast of Section 2 would probably be the best chance to catch it.

In other words, the buildup would probably be oriented in a northeast-southwest orientation.

Q. Potentially make the Ismay zone more productive in that area; is that --

A. Yes, the -- I don't remember how much the well in Section 11 has made, but it has made a considerable amount more than any of the other wells in the field.

EXAMINER CATANACH: That's all I have.

Do you have anything?

FURTHER EXAMINATION

BY MR. SIMON:

Q. Do you by any chance happen to have a cross-section with you indicating this carbonate buildup?

A. No, I don't. I just have a log.

MR. SIMON: Okay. That's it.

EXAMINER CATANACH: Okay, this witness may be excused.

MR. BRUCE: Mr. Examiner, I'd ask that Exhibit 7, the topo map, be admitted into the record.

EXAMINER CATANACH: Exhibit Number 7 will be admitted as evidence.

BARRY VOIGT,

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

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Barry Voigt.

Q. Who do you work for?

A. I work for Cross Timbers Oil Company as an engineer.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Would you please outline your educational and employment background?

A. I have a -- received a bachelor's of science degree from Colorado School of Mines in petroleum engineering in 1991. From then until 1993 I worked for ARCO Oil and Gas. From 1993 to 1995 I worked for an engineering consulting firm. And from that point on, I've worked for Cross Timbers.

Q. Are you familiar with the engineering matters related to the Applications before the Division today?

A. Yes.

Q. And your area of responsibility includes this portion of the San Juan Basin?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Mr. Voigt as an expert petroleum engineer.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Voigt, you have two exhibits. One is for the -- Let's go to the first one, for the Ute Indians A 27 well. Could you discuss what that shows and discuss why you did the reservoir analysis for this well, as opposed to the other Dakota wells we're talking about here today?

A. Currently, this well just has one Dakota well producing within the quarter section, in the southeast quarter of Section 2.

Since we are planning on drilling additional wells in there, I did volumetric analysis to see if the current well was going to produce the reserves in that quarter section.

What I did on the volumetrics was just doing the first three Dakota sands, not including the lower Dakota sands or the Morrison in my volumetric calculation.

Total gas in place for the first three sands is approximately 949 million cubic feet.

And the Ute Indians A Number 20, has a cumulative production as of 5-98 as of 133 million. It's currently producing at a rate of approximately 9 MCF a day, so I did not increase it from the decline-curve EUR.

Recovery of gas in place, based on those numbers, would be about 14 percent, in the quarter section. Therefore, if you go to the remaining reserves, what I did is, I took the gas in place, applied an 85-percent recovery factor to bring the recoverable gas in place down to 807 million cubic feet, subtracted off the expected recovery from A 20, and that left a remaining reserves of 674 million cubic feet.

Q. So in summary, Mr. Voigt, even if the 27 well is not fault-separated from the Number 20 well, there are substantial reserves to be recovered yet in that quarter section?

A. Correct.

Q. What are the remaining pages of Exhibit 5?

A. The remaining pages are just my volumetric calculations and all the input variables that went into them for each of the Dakota sands --

Q. Okay.

A. -- and where the data was collected.

Q. Let's move on to your Exhibit 6 regarding the currently existing A Number 7 well, the Paradox well.

Could you identify this exhibit for the Examiner and tell him what it says?

A. Exhibit 6 is the Ute Indians A 7, which is the current Paradox producing well in Section 2. That well has produced, as of 5-98, 10 BCF, a little over 10 BCF.

From a decline curve EUR, which I have supplied a plot in the following pages, estimated ultimate recovery on that well is about 10.1 BCF.

On the second page of this is a P/Z plot on the A Number 7, which shows that the gas in place for the Paradox, based on the pressures, the P/Z plot, is 13.6 BCF.

If I apply an 85-percent recovery factor, I end up with 11.5 BCF recoverable.

Since the A Number 7 is only going to recover 10.1 BCF, the unrecovered reserves from that well are approximately 1.4 BCF.

Q. So it's worthwhile drilling another well to try to recover what was left by the A 7?

A. Yes.

Q. Looking at your page 3 of your exhibit, is this a production history or chart, graph, of the A 7?

A. Yes, it's a plot of the production history of the Ute Indians A Number 7.

As was previously stated, in 1955 it was originally completed. In November of 1961 they repaired a

casing leak at 3815 feet, which you can't see on this plot.

In 1984 they perforated an additional zone called the Honnacker Trail. And as you can see, their production problems started during 1984.

They found a casing leak in June of 1984 from 377 to 439 feet and squeezed that. And as you can see, you still have no real production response.

In May of 1985 they pumped a solvent acid cleanup job on both the Honnacker Trail and the Paradox formations. And as you can see, you still have not regained production up to the performance that it was at before.

And in June of 1993 they squeezed the Honnacker Trail and re-acidized the Paradox formation, and still had no response.

Q. So in your opinion, is the current producing rate a fraction of what it really should be?

A. Yes.

Q. Were Exhibits 5 and 6 prepared by you or under your direction?

A. Yes.

Q. And in your opinion, is the granting of these Applications in the interests of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd tender Cross

Timbers 5 and 6 into the record.

EXAMINER CATANACH: Exhibits 5 and 6 will be admitted as evidence.

Mr. Simon, do you have any questions?

MR. SIMON: Yes, sir.

EXAMINATION

BY MR. SIMON:

Q. Mr. Voigt, what have you done, from a reservoir-engineering standpoint, especially relating to bottomhole pressures, to determine whether any effective drainage has taken place between wells? My question to your geologist was earmarked in that direction, in that you have some wells across faults, and unless you have done some very detailed reservoir -- I'm sorry, detailed bottomhole pressure work, if you've taken any interference tests, if you've taken any reservoir-limit tests, you really don't know whether one well is sufficiently draining another area, do you?

A. The pressure data would help you out in that instance, yes.

Q. What else beside pressure data can you come up with that would indicate that there is any drainage taking place?

A. You can look at your volumetrics, and that will help you out. Or if you have P/Z data.

Q. Right.

A. The -- I do not have any P/Z data on the Dakota. I do have it on the Paradox, but I have not been able to locate any on the Dakota.

Q. Well, don't you feel from a reservoir-engineering standpoint that that needs to be very much explored before you start asking for additional Dakota locations, Morrison locations, when in essence some of that area may or may not have been drained?

A. In the instance of the Section 2 well, to my knowledge those wells -- the only well you have producing out of the Morrison is the one in the southwest quarter, the Ute Indians A 25.

Q. Twenty-five?

A. Yes.

Q. Uh-huh.

A. And since these are a Morrison test, we are trying to go for the Morrison in the southeast quarter --

Q. Well, I thought --

A. -- and Dakota.

Q. -- the primary target was the Dakota?

A. Dakota, with the Morrison test.

Q. With the additional --

A. Yes.

Q. -- exploitation of the Morrison?

A. Yeah. And by volumetric calculations, I've shown that you're not going to recover all the gas in place with the current well, just in the first three sands. And that's not including the lower sands or the Morrison volumetrics.

Q. Well, I was just wondering -- I was trying to read and listen to you at the same time --

A. Yes.

Q. -- and I apologize for that -- as to what the recovery efficiency is in the Morrison -- I mean, excuse me, in the Dakota, or even in the Paradox.

A. I believe the recovery efficiency in the Dakota wells would be approximately 85 percent.

Q. In the Dakota wells?

A. Yes.

Q. Eighty-five percent recovery, okay.

A. Correct.

Q. How about the Paradox? Have you --

A. If you were to do some material balance --

Q. Right.

A. -- and use the bottomhole pressures for abandonment pressure.

Q. Right.

A. And in the Paradox, 85 percent recovery factor was basically based on about a 530-pound abandonment

pressure.

Q. Okay. So really, in summation, we can say that we have no, if you will, *bona fide* evidence to indicate whether the wells that you now have will drain the locations that you are proposing without the benefit of additional bottomhole pressure analysis.

Did you say that you had not looked at any bottomhole pressures, or there were no bottomhole pressures?

A. In the Dakota, the only pressures that I have found in the well files that we obtained from Amoco were shut-in casing pressures at the time of first delivery.

Q. Would you not think it would be advisable, before you haul off and drill these wells and spend the money, to try to do some interference testing? That may be a lot cheaper than drilling a well.

A. When you look at it, these wells are not all that expensive to drill. They are approximately $200,000.

Q. Okay.

A. And I believe in the volumetrics that I've calculated here, that we will not recover the reserves with the current well. And that well looks like it had problems within its lifetime also, that A 20, if you look at the production history on it.

Q. Right.

A. Because it fell off dramatically in 1989.

Q. Would you say it's proper to conclude that the drilling of these wells, based on what you tell me and based on the evidence that we have to date as to what has been drained and what's not been drained, that one of the purposes of drilling these wells is to get the gas out quicker from an economic standpoint?

A. No, it's to recover -- get the highest recovery efficiency possible in the reservoir.

Q. Highest recovery efficiency --

A. Yes.

Q. -- without any relationship to the economics?

A. Because -- Well, there's also an economic factor in there. In order to drill, you have to drill an economic well.

Q. Correct.

A. And if you go back to my Exhibit Number 5 where the Ute Indians A 20 looks like it's only going to recover about 14 percent of the volumetric --

Q. Right.

A. -- gas in place, when in most gas reservoirs you recover 80-percent-plus, it seems like you are, you know, inefficiently draining that section.

Q. But your 85-percent recovery is related not to water-drive reservoirs, gas reservoirs?

A. Yes.

Q. You're talking about solution gas drive?

A. Yes.

Q. Okay. I don't know whether you're the person to ask the person of, but it will fall in engineering and the completion area of drilling and completion. Is the question that you mentioned about -- I mean that the geologist mentioned, that you hope to complete in all of the zones in the Paradox --

A. In this location, yes.

Q. Right. And I just wondered, are you aware of the BLM's position and the Tribe's position that commingling without special permission and without special testing is not going to be permitted?

A. Within the Paradox?

Q. Within anything that we do on the Indian reservation?

Let me rephrase that so I don't confuse you on that.

A. Are you saying between the Paradox and the Dakota, or --

Q. No, the zones within the Paradox. You've got the Ismay and several others. They will not be totally commingled together, based on what the BLM and the Tribe has done relating to Burlington and what they have done in

the adjacent area.

In other words, what I'm saying is that we're just not -- the Tribe and the BLM will just not permit you going in and randomly perforating various zones that are separate, geologically separate, and producing them with one volume being related to that well each month, that it will have to be allocated based on some testing or the old spinner survey, which I'm sure you're familiar with, as to allocating what percent of what gas comes out of what zone --

A. Yes.

Q. -- and the production is then allocated. Either that, or you can quadruple- or triple-complete, whatever you want to do.

You know, we would favor total separation so that we could accurately measure the volumes of gas that are coming out of the reservoir.

A. Yes.

Q. And this is something that we would have to work out. When I say "we", I'm talking about the BLM.

And also the OCD, I don't know what their position is on commingling today in this area, but certainly we'd want to work with them as well.

Well, I just wanted to bring that to your attention because of what was mentioned, that you may want

to complete several zones within the Paradox.

A. Yes.

Q. Okay. Again, I apologize if I'm asking the wrong person, but --

A. Okay.

Q. -- you're talking here in some cases about plugging wells, in favor of a new well.

A. Yes.

Q. For example, this Number 7 well versus the well that you're going to drill to replace it?

A. Yes.

Q. Again, I'm not certain, but I think it's only fair to mention to you that before you plug any well on the reservation, the Tribe should be consulted and have the right to take the well over.

A. Yes. Our intent is to shut in the A 7 well while the other well is producing, and not plugging it.

Q. Okay.

A. Just shutting it in.

Q. Right. Okay. Well, if there was any thought along those lines --

A. Yes.

Q. -- I thought I would --

A. Yes.

Q. -- mention that to you, that prior to any

plugging, the Tribe would have to have its -- you would have to have the Tribe's approval, in the event that they might want to take it over and produce it themselves.

MR. SIMON: Thank you very much, I appreciate your help.

MR. BRUCE: Mr. Examiner, could I ask a couple of questions to follow this?

EXAMINER CATANACH: (Nods)

FURTHER EXAMINATION

BY MR. BRUCE:

Q. Mr. Voigt, now, looking at this nine-section area of Mr. Ryan's map --

A. Yes.

Q. -- do you know when the last time Amoco -- You bought all of these leases from Amoco, did you not?

A. Correct.

Q. When was the last time Amoco drilled a well in that area?

A. The last time was the A 25 well in the southwest of Section 2. I don't recall the date. I could find it here.

Q. Okay. Is it fair to say that most of these wells were drilled before the Nineties?

A. Yes.

Q. So Amoco has done very little work in developing

these leases over, say, the last decade?

A. Correct.

Q. Cross Timbers is in the business of drilling wells and making money, is it not?

A. Correct.

Q. And the only it can do that is by drilling economic wells; is that right?

A. Correct.

A. And just looking at the Dakota, is the current A 20 well an economic well?

A. Marginal.

Q. Marginally economic?

A. Very marginal. It is close to the economic limit.

Q. And it has recovered -- It's only producing what, 9 MCF a day now?

A. Nine MCF a day, correct.

Q. And Cross Timbers feels it can drill an economic well for the A 27?

A. Correct.

MR. BRUCE: Thank you.

EXAMINER CATANACH: Mr. Simon, with regards to the Division's position on commingling of the Paradox formation, at the current time this is a single pool, which is called the Paradox pool?

MR. SIMON: Right.

EXAMINER CATANACH: We have not broken it down into other producing formations, as we did in Barker Dome, I believe it was?

MR. SIMON: Well, Barker is where Burlington has been drilling some wells, yes, sir.

EXAMINER CATANACH: Right. So we would not -- The way that the pool is configured at this time, we would not have an objection to them perforating more than one zone at a wellbore --

MR. SIMON: Right.

EXAMINER CATANACH: -- because it's not separated --

MR. SIMON: Right.

EXAMINER CATANACH: -- it's all considered by the Division to be one source of supply. Just for the record I'd like to state that.

MR. SIMON: Thank you, appreciate that.

EXAMINER CATANACH: I'm also curious to know whether or not the tribe has a position on the drilling of these wells. Are you taking a position or -- I'm just a little curious as to what --

MR. SIMON: Mr. Examiner, as I mentioned before, in my initial conversation, we have -- "we" being the Tribe and its technical staff, are kind of Johnny-come-latelys in

this area here on these three wells. I seriously apologize that we had not an opportunity to participate when the first three wells by Cross Timbers was requested to be drilled.

Right now, we're just trying to gather as much information as we can to determine whether the drilling of these wells is justified. This is relating to my questions on bottomhole pressures.

I, you know, have seen very little here presented today indicating anything related to actual drainage of the wells. Perhaps the volumetrics that have been presented are as accurate as they can be. But it's just an estimate or a guess, if you will, as to effective drainage taking place. The only way that can be done would be through the analysis of bottomhole pressures, reservoir-limit tests, what have you.

And so we're just trying to seek out as much information as we can and get some clarification. We certainly recognize that the more production on the reservation, the more royalty goes to the Tribe. That is obviously a given in this issue.

However, in the past, which I believe the Tribe is now trying to change, a more active participation in the oil and gas activity on the reservation and a much closer relationship with the BLM. I would like to say also, a

more -- closer relationship with the OCD. But as you well are aware of this MOU, the BLM is supposedly representing the tribe. And in turn, we will try to get our two cents worth in with the BLM prior to their making a conclusion and a recommendation to you.

Again, I profusely apologize because the BLM as not here today, and we are not pleased with that, and I would much rather them be up here talking and questioning than me. But as things turned out they didn't show up, and Mr. Hammond and I felt that it would be appropriate for us to kind of step in and question some of the witnesses in some of these technical areas.

Having said all that, in summation, we're just trying to learn a little bit about why Cross Timbers wants to drill these wells, as well as to the support that they have developed to present to you today.

EXAMINER CATANACH: So you're certainly not opposing the drilling of these wells; your opposition stems from the lack of information that you think is available?

MR. SIMON: Well, I don't want to blame the lack of information on Cross Timbers. I think from what we've heard here, the information has been furnished to the BLM. And I don't think that we want to concur or object at this point, until such time as we have an opportunity to sit down with the BLM and their technical staff, and I think

there's a period of time in which they have to get back to you with their particular recommendation.

And we will make every effort to do that. I can assure you that the Tribe will be hot on the trail of the BLM in trying to resolve this.

Like I say, at this point in time, it's just difficult for us to say, No, we don't like the idea, or, Yes, we concur with it.

EXAMINER CATANACH: Okay.

MR. SIMON: I apologize for having to be so vague about it, but I have no other choice to make at this time.

EXAMINER CATANACH: Okay. Thank you, Mr. Simon.

MR. SIMON: You bet. Thank you.

EXAMINER CATANACH: I've got a few questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. With regards to the volumetric calculations done on the southeast quarter of Section 2, you didn't do any decline-curve analysis on the A 20 to verify the volumetrics?

A. No, did not. Currently the well is producing at about 9 MCF a day. The economic limit is approximately 200 MCF a month. So you're looking at 270 a month. So you have about 70 MCF a month, at a decline of, typically, about six percent. So if you use a six-percent decline, it

might add, at most, 10 to 11 million cubic feet to that number.

But as I said, the well looks like it has been having problems in the past, and in talking to our operations people, it has. And it has a problem flowing.

Q. Certainly the Number 20 well at this point will not be able to recover the remaining gas reserves in that southeast quarter?

A. Correct.

Q. According to your volumetrics?

A. Correct.

Q. And you believe that 674 million are available for that Number 27 to be produced?

A. In the first three Dakota sands, not including the lower Dakota. That does not include what reserves you might find in the lower Dakota or the Morrison, just in the first three Dakota sands.

Q. Why was the lower Dakota excluded from this?

A. You'll probably have to confer with the geologist. Gary?

MR. BURCH: Why was the lower -- ?

THE WITNESS: If I may.

EXAMINER CATANACH: The Dakota -- Is the lower Dakota being produced in the A 20?

THE WITNESS: No, it is --

MR. BURCH: No, it's not.

EXAMINER CATANACH: But there gas reserves in the lower Dakota that haven't been accessed in the wells in the southeast quarter?

MR. BURCH: We feel that if you get up on the structural closure of the southwest fault where you're structurally high, that the lower Dakota sands will be productive there, whereas in the wells that are offstructure the lower Dakota sands are wet.

EXAMINER CATANACH: Was the 20 producing from the Morrison?

MR. BURCH: No, it didn't even drill.

THE WITNESS: Didn't even penetrate.

Q. (By Examiner Catanach) Okay, you have not done any reserve calculations for the Morrison in this quarter section?

A. (By Mr. Voigt) No, just due to poor well control, as far as what is -- you know, is currently producing in the Morrison.

Q. But it is possible that there are some gas reserves that could be produced from the 27?

A. Yes. The A 25 is producing on one of those upstructure areas, and it is currently producing out of the Morrison.

Q. What are your plans for the Number 26? It's --

More than likely, that well is going to be productive in the Paradox; is that correct?

A. Correct.

Q. But you've got no intention at this point to make that a Dakota completion?

A. No, unless the Paradox -- unless something is wrong with the Paradox in that quarter section.

Q. At which point you will recomplete to the Dakota?

A. Correct.

Q. The southwest quarter of Section 1, why didn't you do any volumetrics or decline-curve analysis?

A. I have not performed any on that area, as far as a prepared exhibit.

Q. Well, when you decide whether or not you're going to drill the Number 6 well, what is that based on? Is that based on some kind of knowledge of some amount of gas reserves that may be recovered from that well?

A. Some of it is based on -- If I remember right, I have done volumetric calculations, I just don't have them with me, on that quarter section. So I don't want to state numbers without having the data with me.

Q. Can you supply that to the Division?

A. Yes, I can.

Q. But at this point, from what you recall, there are economic reserves to be recovered by drilling the

Number 6 well?

A. Yes, in the fact that you appear to be fault-separated from the other wells in the quarter section.

Q. Do you have any ideas what may have occurred to the Number 7 well, to make its production drop so dramatically?

A. I have researched the well files, and I have not found anything in there to dictate what might have happened there.

Q. Would that well have recovered all of the gas reserves, had it produced at that rate, or not taken that downturn?

A. I believe so, yes.

Q. At this point, the way the well is producing, for the past decade or so, is it your opinion that it cannot recover all the reserves?

A. Correct.

Q. And that's why it's necessary to drill the 26 well?

A. Correct.

EXAMINER CATANACH: Are there any other questions of this witness?

MR. SIMON: I would really appreciate, Mr. Voigt, if you would send a copy of your calculations there in the southwest quarter to the BLM and to the Tribe as well.

THE WITNESS: I will.

MR. SIMON: I'd appreciate that very much, sir.

MR. BRUCE: Nothing further. Mr. Examiner, one thing with respect to the A 26 well. Although Cross Timbers requested a specific location, we would like a drilling window on that directional well. And I forget what the standard Division window is.

EXAMINER CATANACH: Are you talking about within a hundred feet of the bottomhole location, something like that?

MR. BRUCE: Something like that. Maybe a radius of 100 or 150 feet, something like that.

EXAMINER CATANACH: What are you requesting?

MR. BRUCE: Let's make it 150..

EXAMINER CATANACH: Mr. Bruce, would you -- just for clarification, would you care to draft me some orders in this case --

MR. BRUCE: Sure.

EXAMINER CATANACH: -- so I make sure I get everything right? You might provide those also to the tribe and to BLM.

With that, is there anything further?

MR. SIMON: Just mention that the BLM is the BLM office in Durango, not Farmington.

MR. BRUCE: Yeah, that's where the original --

MR. SIMON: Right.

MR. BRUCE: -- locations were submitted by Cross Timbers, was to the Durango office.

EXAMINER CATANACH: Okay. There being nothing further, Cases 12,098, 12,099 and 12,100 will be taken under advisement.

MR. SIMON: Mr. Examiner, thank you for giving us an opportunity to participate.

EXAMINER CATANACH: You bet.

MR. SIMON: We appreciate it.

(Thereupon, these proceedings were concluded at 10:25 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12098, 12099 12100 heard by me on 12/17 1998.

David R. Catanach, Examiner
Oil Conservation Division

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 December 19th, 1998.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002