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:	)	CASE NO. 12,428
APPLICATION OF CROSS TIMBERS OIL COMPANY FOR COMPULSORY POOLING, SAN JUAN COUNTY, NEW MEXICO	)	

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

June 15th, 2000

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, June 15th, 2000, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

June 15th, 2000
Examiner Hearing
CASE NO. 12,428

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E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION:

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FOR SG METHANE INTERESTS:

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By: W. THOMAS KELLAHIN

* * *

WHEREUPON, the following proceedings were had at 8:24 a.m.:

EXAMINER CATANACH: At this time we'll call Case 12,428, the Application of Cross Timbers Oil Company for compulsory pooling, San Juan County, New Mexico.

Call for appearances in this case.

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

EXAMINER CATANACH: Additional appearances?

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing today on behalf of SG Methane Interests.

EXAMINER CATANACH: Will the witnesses please stand to be sworn in?

(Thereupon, the witnesses were sworn.)

GEORGE A. COX,

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. George A. Cox, Fort Worth, Texas.

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

A. I'm a landman with Cross Timbers Oil Company.

Q. Have you previously testified before the Division?

A. Yes, I have.

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

A. Yes, they were.

Q. And are you familiar with the land matters involved in this Application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Cox as an expert petroleum landman.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Cox, briefly, what does Cross Timbers seek in this case?

A. We seek to pool the Pictured Cliffs and the southwest quarter of Section 21 of 29 North, 10 West.

Q. Mr. Cox, the Application originally requested surface to the base of the Pictured Cliffs, but you only need to pool the Pictured Cliffs; is that correct?

A. That is correct.

Q. Could you identify Exhibit 1 for the Examiner and just briefly state what it shows?

A. Yes, Exhibit 1 is a map of the area that shows the outline of the unit and our proposed location for this

well.

Q. Okay. And it also shows various offset wells?

A. Yes, sir.

Q. And some of the other witnesses will discuss those wells?

A. Yes, that's correct.

Q. Okay. Let's move on to your Exhibit 2. Does this contain your correspondence with the interest owners in this well unit?

A. Yes, it does.

Q. Would you go to the third page of this exhibit, which is an attachment to your March 20th letter, and identify the parties involved with the working interest owners in this well unit and which ones you seek to force pool in this case?

A. The parties that we are seeking to force pool is SG Methane Company, Inc., and the Frederick L. Lilly and Gladys Lilly Life Estate, along with Frederick L. Lilly, Jr., Remainderman.

Q. Okay.

A. The other -- R&W and Barbara Bramley are -- We've purchased their interest, so they're no longer an interest owner.

Q. Okay. Would you just briefly go through your correspondence and briefly explain your contacts with the

working interest owners regarding this well?

A. Well, we sent the proposal letter out on March 20th, along with the AFE and a JOA, and then I followed it up with another correspondence on April the 10th, requesting a reply to our proposal, and then again on May 1st, again, a reply to those parties who had not made an election, and then filed the Application.

Q. Okay. Is the operating agreement what you mailed to the parties as your proposal?

A. Yes, sir.

Q. Okay. Since SG Methane is here, would you briefly describe what their response has been to your Application?

A. The conversation we had with them is that they were not interested in joining the well, as I understand at this point.

Q. Okay. But you have had telephone conversation with them in addition to these --

A. Yes, yes, we have.

Q. -- in addition to the correspondence?

A. Yes.

Q. Okay. In your opinion, have you made a good faith effort to obtain the voluntary joinder of these three working interest owners in the well unit?

A. Yes, sir.

Q. Looking at the AFE, was that also mailed to the interest owners?

A. Yes, it was.

Q. What are the proposed well costs?

A. The proposed cost for a dry hole is $56,800, and a completed cost of $169,600.

Q. Are these well costs in line with the costs of other wells drilled to this depth in this area of New Mexico?

A. Yes, sir.

Q. What overhead rates does Cross Timbers request?

A. We would request a drilling rate of $5750 and a producing rate of $575 a month.

Q. Are these rates fair and reasonable, in your opinion?

A. Yes, sir.

Q. And are they rates that Cross Timbers and other operators are subject to in this area?

A. Yes, sir.

Q. Does Cross Timbers request that Cross Timbers Operating Company be named as operator of the well?

A. Yes, we do.

Q. Okay. And finally, was notice given to the parties being pooled in this case?

A. Yes, it was.

Q. And is Exhibit 3 my affidavit of notice?
A. Yes, sir.
Q. Were Exhibits 1 through 3 prepared by you or under your direction or compiled from company business records?
A. Yes, they were.
Q. And in your opinion is the granting of this Application in the interests of conservation and the prevention of waste?
A. Yes, sir.
MR. BRUCE: Mr. Examiner, I'd move the admission of Cross Timbers Exhibits 1 through 3.
EXAMINER CATANACH: Exhibits 1 through 3 will be admitted as evidence.
Mr. Kellahin, do you have any questions?
MR. KELLAHIN: Yes, Mr. Examiner.

CROSS-EXAMINATION

BY MR. KELLAHIN:
Q. Mr. Cox, your pooling Application, or that of your company, is limited to the Pictured Cliffs sand formation, is it not?
A. Yes, sir.
Q. When did Cross Timbers acquire its interest in that formation?
A. We bought our interest from Amoco back in 1997, I

believe it was.

Q. The well name would imply to me that it's a communitization of more than a single lease in the southwest quarter?

A. Yes, sir.

Q. What is the configuration of the leases in the southwest quarter; do you know?

A. I don't have that --

Q. Okay.

A. -- right here, no, I'm sorry.

Q. Does Cross Timbers have any interest in the Fruitland Coal Gas Pool in the southwest quarter of 21?

A. Yes, sir.

Q. Do you know what that interest is?

A. Yes, we have an overriding royalty position in there of approximately 15.3125 percent.

Q. When you got your interest from Amoco in the Pictured Cliff, do you know how that language described your interest?

A. How it described our interest?

Q. Yes, sir. Was it based upon any correlation to a type log or a stratigraphic equivalent, or do you know how that was described?

A. No, sir. I know that when we got it Amoco had already farmed out the interest in there from the surface

to the base of the Fruitland Coal, and so the deeper depths were available. I mean, were not under any production.

Q. When I look at Exhibit 1, are you the witness that's able to tell me which other Pictured Cliff wells your company operates in this area?

A. I would have the engineer or geologist do that.

Q. Within Section 21, do you know which ones are the Pictured Cliff wells? Is there another witness that can tell me that?

A. Yes, the other witness can cover that a lot better than I can.

Q. Distinguish Coal gas wells from the PC wells?

A. Yes, sir. Yes, sir.

Q. What was the AFE cost, again, for the well, Mr. Cox?

A. The AFE cost was $56,800 for a dry hole and $169,600 for a completed well.

Q. Are you responsible for preparing those AFEs?

A. No, sir.

Q. Is another witness here today responsible for --

A. Yes, sir, the engineer.

Q. -- those numbers?

A. Yes, sir.

Q. All right, so he could describe and discuss the components of the AFE?

A. Yes, sir.

MR. KELLAHIN: All right. Thank you, Mr. Cox. Thank you, Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Cox, have you been in communication with the Lilly interest in this?

A. Not by phone. I mean, the only correspondence I've had is through the certified letters I've sent them, and have not had any phone contact with them.

Q. They have received the letters, however?

A. Yes, sir.

Q. You don't anticipate that they're going to join in the well?

A. No, sir. I've had no response from them whatsoever.

Q. Does Cross Timbers operate Pictured Cliffs wells in this area?

A. Yes, sir.

Q. And as far as you know, the overhead rates that you're proposing, are those in line with overhead rates that you're charging for other wells in this area?

A. That's my understanding, yes, sir.

Q. And it's my understanding that you wish to name Cross Timbers Operating Company as the operator of this

well?

A. Yes, sir.

EXAMINER CATANACH: I have no further questions. This witness may be excused.

RANDALL HOSEY,

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. Randall Hosey, R-a-n-d-a-l-l H-o-s-e-y.

Q. Who do you work for?

A. I work for Cross Timbers as a senior geologist.

Q. Have you previously testified before the Division?

A. No, I have not.

Q. Would you outline your educational and employment background for the Examiner?

A. Yes, I graduated from Arkansas Tech with a bachelor of science in geology in 1988. I attended Texas Christian University in Fort Worth, Texas, for graduate school, and I have been employed with Cross Timbers since 1993 as a geologist.

Q. Are you familiar with the geology involved in this Application?

A. Yes, I am.

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

A. Yes, it does.

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

EXAMINER CATANACH: Any objection?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: Mr. Hosey is so qualified.

Q. (By Mr. Bruce) Mr. Hosey, what is the primary zone of interest in this well?

A. The primary zone of interest is the Pictured Cliffs sandstone.

Q. Would you identify your Exhibit 4 and maybe discuss the Pictured Cliffs geology in this area?

A. Exhibit 4 is a structure map on the top of the Pictured Cliffs. The contour interval on this map is 50 feet -- or 20 feet, excuse me. The wells that are colored with yellow circles show the wells that are currently or have at one time produced from the Pictured Cliffs formation. The proposed location is shown there as "Proposed Location", and that actual location is 1835 from south line, 1910 from west line.

The A-A' letters shows the cross-section that is Exhibit Number 6.

Q. Before we move off from this map, in response to one of Mr. Kellahin's questions, could you identify any Fruitland Coal wells in Section 21?

A. I believe the only Fruitland Coal well in Section 21 is the Trujillo 29-10-21 in the southwest quarter of the section. That well is operated by SG Methane.

Q. Okay. I see a couple of other -- or three other wells. Are those Dakota wells?

A. Yes.

Q. Okay. Why don't you move on to you Exhibit 5 and identify that, please?

A. Exhibit 5 is an isopach map of the Pictured Cliffs sandstone. This is a map estimating thickness from the SP log. A lot of the logs, the original wells did not have very good logs, and so basically I used logs from the Dakota wells, and they were typically just electric logs. So all you really had was an SP log.

Q. Now, looking at this exhibit, could you give the reasons for this well location as opposed to, you know, moving to the north, south, or east or west?

A. Our primary decision for this location is to target the thickest portion of the pay within this unit. There's a thick trend that -- from Section 27 up through Section 17, basically a northwest-southeast trend. Our analysis shows us that if you get into this trend, your

wells tend to be better producers.

Q. Are you also trying to move away from the other Pictured Cliffs wells in the south half?

A. Yes, we are.

Q. Okay. Why don't you move on to your cross-section, which is Exhibit 6, and tell the Examiner what that shows.

A. Exhibit 6 is a stratigraphic cross-section, A-A', and that can be seen -- that line of section is shown on Exhibit 4. The horizon that this -- The datum that this is hung on is the base of the Pictured Cliffs sandstone. And shown on here is also the Fruitland formation, including the lower Fruitland Coal and then the Pictured Cliffs sandstone. And basically, the typically productive part of the Pictured Cliffs sandstone is stippled.

The proposed location, if you look closely on the center well, there's a proposed location, Trujillo Gas Com 1-R, showing its approximate location in the cross-section.

The darker colored, where the lower Fruitland Coal -- that is the thick lower Coal. There are, in some cases, thin two- to three-foot Coal beds that occur between that and the top of the Pictured Cliffs.

Q. Does the shaded area indicate the primary productive zone in the Pictured Cliffs?

A. Yes, it does.

Q. Okay. Based on your geology do you believe that the maximum penalty of cost plus 200 percent should be imposed against any working interest owner who goes nonconsent in this well?

A. Yes, I do.

Q. Were Exhibits 4, 5 and 6 prepared by you or under your supervision?

A. Yes, they were.

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

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 4 and 5 and 6.

EXAMINER CATANACH: Exhibits 4, 5 and 6 will be admitted as evidence.

Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Hosey, in response to questions by your attorney, you said that the Pictured Cliff was the primary zone. In fact, it's the only zone, right?

A. Actually it's the only zone, yes, sir.

Q. When we look at your cross-section, you have

identified on Exhibit 4 the line of cross-section for cross-section Exhibit 6. It excludes the SG Methane Coal gas well, right?

A. Yes, it does.

Q. Have you examined the log on that well?

A. Yes, I have.

Q. Are you familiar with the Fruitland Coal Gas Pool?

A. Yes, I am.

Q. Do you have any involvement prior to this with locating, drilling and producing Fruitland Coal Gas wells?

A. Yes. Not in this area, but yes.

Q. Okay. When I look at your projection of your well, the Trujillo Gas Com 1-R, on the cross-section, can you show me approximately where this well will be in relationship to the SG Methane Coal gas well?

A. I don't understand. Where would I -- If I were putting the SG well on this?

Q. Yes, sir.

A. It would be -- the SG, if I plunge the SG well into this line of section, it would be approximately halfway between the Pan Am -- the Garcia Gas Unit "B" Number 1 and the Haney Gas Unit "B" Number 1. It would line up basically in the middle.

Q. Is it your understanding that the SG Methane Coal

gas well produces from what you've identified as this lower Fruitland Coal?

A. Yes, it's perforated to within six feet of the top of the Pictured Cliffs.

Q. So to approximate visually for the Examiner, if we project the SG Methane well, it would be just to the left of your projection, and its production is in this lower Fruitland Coal?

A. Yes.

Q. The Pictured Cliff that you're penetrating is identified by the stippled area?

A. Yes, it is.

Q. What in your estimation will be the vertical separation between the top of your Pictured Cliff and the base of the lower Fruitland Coal?

A. With the data that we have, based on this projection, excluding the -- you know, if they encounter some of the lower Coals, these thin lower Coals, it would be approximately 18 feet, unless these lower thin Coals are encountered, and then it could be as less as six to eight feet.

Q. Within that interval, that 18-foot interval, what maintains the integrity or the separation of the Pictured Cliffs sand gas from the Fruitland Coal gas?

A. I think that that would be a question that the

engineer would be better qualified to answer, because I think --

Q. Well, geologically, what is the lithology of the formations --

A. Well, the --

Q. -- that would --

A. -- the --

Q. -- about the separation?

A. -- the Pictured Cliffs, the Pictured Cliffs is a barrier beach sandstone. The Coals are basically Coals with interbedded shales below.

So basically, your reservoir in the Pictured Cliffs is primarily a sandstone. It's highly depleted -- of course, the engineer will testify to that. Or it's potentially depleted -- versus the Coal, which is -- basically, it's a Coal.

Q. Let me ask you this, at the top of what you project to be the top of the Pictured Cliffs sandstone, how do you as a geologist identify that as being the top of the Pictured Cliff?

A. I use -- With these old SP logs, you basically use the inflection point of the spontaneous potential log.

Q. And when that point deflects farther to the right, you know that you're out of the sand?

A. Yes. I mean, that's the inference. There are

cases, if you look at the Haney Gas Unit "B" 1, there does appear to be a thin Coal just above the top of the Pictured Cliffs. And therefore the top of the Pictured Cliffs is not picked at the inflection point of the SP, but it's picked a little lower, because there is a Coal.

Q. Okay. So at the top of the Pictured Cliffs sand and at the base of the Coal, there's this separation of about 18 feet, as best you can estimate?

A. Right.

Q. What is the composition of that material? What is it?

A. Shale and -- Basically, unless there are thin Coals, it's primarily shale.

Q. Okay. Is your depth of your proposed well sufficient enough to penetrate the base of the Pictured Cliff?

A. Yes, it is.

Q. In this particular area, is the Pictured Cliff Pool characterized by an upper sand and a lower sand?

A. No, it's not, I don't believe so.

Q. Are you familiar with the Division's decision in the Pendragon case?

A. No, I'm not. I'm vaguely familiar.

Q. Have you studied any geologic components of that case to look for similarities or dissimilarities to your

case?

A. No, I have not.

Q. Have you calculated for your engineer any volumetrics on the potential gas in place for the Pictured Cliff?

A. Yes, the engineer took my isopach map and had it planimetered, and he has volumetric calculations.

Q. Okay, let's look at your isopach. It's Exhibit 5. Help me understand the color code. What's the significance of that?

A. The significance of the color is basically to make it look good. It's to give you a visualization as to where the thickest part of the pay is. Basically, anything in this map that's colored red is pay greater than 60 feet or a thickness of greater than 60 feet. The brownish beige or orange color is greater than 50, and anything in green is greater than 40 feet.

Q. All right, sir. In the south half of 21, you have an elliptical-shaped portion of the Pictured Cliffs that has a thickness of greater than 60 feet?

A. Yes.

Q. What's the data point that supports that?

A. Basically, it's a -- we have a -- The Garcia Gas Com, that's 56 feet, and we -- basically along these trends we see that. It's an interpretation.

Q. The Prespentt Gas Unit well, you see that in the southeast quarter of 21?

A. Yes.

Q. Is that a Pictured Cliff well?

A. Yes, it is.

Q. What's the isopach thickness on that well? What's that going to be?

A. I have it estimated at 60 feet.

Q. At 60 feet. Is this a net pay map?

A. It's an isopach map of permeability from SP cutoff.

Q. So it is a net map.

A. Yes, it can be used as a net map.

Q. So what were your cutoffs to make it a net map?

A. Basically SP deflection.

Q. And value did you discard in making the map? Is there a plus or a minus point?

A. No.

Q. How come you haven't put your location in the thickest point, then, in the southwest quarter of the section?

A. We were trying to stay as far away from that -- the original Trujillo well, and stay within an orthodox location.

Q. Okay. Does Cross Timbers operate any other PC

wells in 21?

A. Yes, we do.

Q. Which ones are those?

A. The Prespentt Gas Unit Number 1.

Q. Okay. The status, then, of the PC well in the southwest quarter -- These names are confusing me. The Trujillo --

A. Yes.

Q. The Trujillo well, that's spotted as a PC well?

A. Yes, and that's --

Q. You operate that well?

A. That well is no longer producing.

Q. And what's your intent on that well?

A. I'm not sure if that well has been plugged. The engineer will know that.

Q. This new well, as you understand it, is a replacement for that well?

A. Yes, it is.

Q. Okay. Your recommendation for the completion on the Trujillo Gas Com 1 well, your well, will be to do what within the Pictured Cliff sand interval as you've shown it?

A. Well, the engineer can talk more specifically about the completions, but we will recommend the perforations within the Pictured Cliffs sandstone, and the engineer can talk about how they're going to stimulate it.

Q. Are you going to be the field geologist that makes those decisions in the field if this well is drilled or during drilling?

A. I will -- myself and the engineer will evaluate the open-hole logs that we run on the well, and we'll make the determination based on those.

Q. And once you have the open-hole logs, before you complete the well, then you can make an actual determination of the relationship of the PC to the Fruitland Coal gas, right?

A. Yes, that's correct.

MR. KELLAHIN: No further questions, thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Hosey, do you know why the old PC well is not producing?

A. The engineer, he can discuss that. I believe there are several -- we did not -- When we bought or purchased our interest from Amoco, any wells that were not producing or plugged and abandoned when we acquired it, we did not receive any well files on those wells, so we don't know the exact reason, but the engineer, I think, has some things that he thinks happened, part of which -- and I'm not the expert at this, but it could have been line pressure. We were having a lot of wells coming on at that

time in the Basin, and these wells have been producing since the 1950s, and the pressures are down, and they were not able to buck line pressure in some instances.

Q. The PC well in the southeast quarter of this section, is that a well that you operate?

A. Yes, it is.

Q. And was that drilled by you, or did you take that over?

A. That was acquired in the Amoco acquisition.

Q. So you did not complete that well?

A. No, that well was drilled and completed by Amoco.

Q. Is there a risk that this new well will be noneconomic or it won't be a good producer in this section?

A. Yes, the Trujillo 1 has produced a significant amount of gas. I don't know the exact number; again, the engineer has that engineering data. I think, based on the volumetrics and his analysis, I think there are still reserves to be recovered. But there is a chance that, you know, as -- Maybe the 60-foot contour isn't there, so you don't have near as much gas in place as you think you do. There's the risk of drilling the well itself, and there is the risk of being depleted by the existing wells in the south half, or even in this whole entire section.

Q. Do you operate any north-half wells in this section?

A. No, we do not.

Q. Those are PC wells in the north half that are colored in yellow on your Exhibit 5?

A. Yes, they are. And it's my understanding that the PC well in the northeast quarter of this section is no longer producing. The well in the northwest quarter is still currently producing.

Q. Do you know who operates those?

A. I think they're Burlington, but I'm not sure.

Q. Okay.

A. The engineer has a plat that shows who's operating those wells.

EXAMINER CATANACH: I have no further questions of this witness.

MR. KELLAHIN: One follow-up, Mr. Examiner.

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q. In response to Mr. Catanach, you were assessing the components of the risk. I didn't hear you attach any risk to finding the reservoir. You're assured of finding the reservoir, are you not?

A. Yes. We will encounter the Pictured Cliffs. I mean, unless something really strange goes on, we will encounter Pictured Cliffs sandstone. But the risk is that it's not as thick as we're proposing, and if it's not as

thick, then there may not be as much gas remaining in the quarter section.

Q. Do you have a number in mind to establish a minimum thickness?

A. No. We will -- Basically I can tell you now that there's a 99-percent chance that we'll set pipe and at least attempt a completion on the well.

MR. KELLAHIN: Okay. Thank you, sir.

MR. BRUCE: I have no further questions.

EXAMINER CATANACH: This witness may be excused.

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

A. Barry Voigt, Euless, Texas.

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

A. I work for Cross Timbers as a reservoir engineer.

Q. Have you previously testified before the Division?

A. Yes, I have.

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

A. Yes, they were.

Q. And are you familiar with the engineering involved in this Application?

A. Yes, I am.

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

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Voigt, could you identify Exhibit 7 for the Examiner and discuss what it shows about the Pictured Cliffs gas wells in this area?

A. Exhibit 7 is a cumulative production map of the Pictured Cliffs. You have cumulative oil and cumulative gas stated. Those are the top numbers, above the well spot.

And then you have the current rates on oil and gas. What those are, those are the average rates for the year. So January through December.

And then you have the start of production and the end of production dates at the bottom, and then the zone listed below that.

Q. Okay. Just to be clear, like looking Prespentt Gas Com Number 1 -- what? That has produced zero barrels of fluid and 1265 MMCF of gas?

A. Yes.

Q. And the current rate is zero and 45 a day?

A. Yeah, the average rate for the 1999 year is 45.

Q. Okay.

A. That well is actually producing at a higher current rate.

Q. And that well was drilled in what? September of 1957?

A. Yes.

Q. Okay, just to make it clear. Let's go into some of these questions about why you located the well there, at its proposed location. What is your idea behind the well location?

A. There's a couple reasons. Topography plays a fact on any well spot in the San Juan Basin. And also not knowing the truth of why the Trujillo Gas Com 1, you know, production fell off and was plugged. I know that some of the wells that we purchased from Amoco in some other areas have had some problems with leaks in the Ojo Alamo, casing leaks up at the Ojo Alamo level, and a lot of times they went in and just plugged the well, depending on how long the leak had gone on. So that was some of it.

And the other was to get into a thicker part of the Pictured Cliffs.

Q. And maximize, if you could, the distance away from the existing wells?

A. Yes.

Q. Okay. Could you identify your Exhibit 8 for the Examiner?

A. Exhibit 8 is a table showing the offset 160-acre Pictured Cliffs units. It shows the lease, the well number, where it's located and its cum, its current rate and the estimated ultimate recovery.

The average of the offsetting 160-acre unit's cum is about 1.2 BCF and expected EURs of 1.4 to 1.5 BCF.

Q. What was the -- Again, what did the Trujillo Gas Com Number 1 produce?

A. 952.

Q. Okay. Based on this data and the other work you perform in this area, what do you hope to recover, roughly, from the new well?

A. I'm looking at possibly 350 to 400 million cubic feet.

Q. Okay. But it could be less than that if, as Mr. Hosey said, the sand is thinner --

A. Yes.

Q. -- than what is projected?

A. Yes.

Q. Looking at the risk involved in drilling a well, what risks do you see besides the thinner sand?

A. Besides the thinner sand? Of course, since all these wells were drilled in the 1950s, basically, you

always risk a little bit of a depletion factor in there, that the depletion is more than what you expect.

Q. And so there is a chance that you could recover substantially less than the 350 you're talking about?

A. Yes.

Q. Based on that, do you believe the cost-plus-200-percent risk factor is reasonable?

A. Yes, I do.

Q. Okay. Let's discuss a little bit of the production history of the PC wells in this area. Did they produce much in the way of fluids, whether oil or water?

A. I have not seen -- As far as reported production, I have not seen significant amounts of water or --

Q. And that's typical PC, Pictured Cliffs, production, is it not?

A. Yes.

Q. As opposed to Fruitland Coal production?

A. Where you have significant quantities of water, especially in the early lives of the wells.

Q. Okay, which indicates that these wells are perforated in and producing form the Pictured Cliffs?

A. Yes.

Q. Okay. Have any of these wells on this Exhibit 7 been drilled recently?

A. Yes, one of the most recent wells that has been

drilled is up in Section 17, Burlington redrilled their Hubbell 6 PC well as the Hubbell 6R, in June of 1999.

Q. Okay.

A. And that was just a replacement well for the Hubbell 6.

Q. Basically, it looks like you're trying to do basically the same thing that Burlington was doing?

A. Yeah, Burlington was moving up into a thicker part, or up into the trend of the PC, while staying away from their existing well.

Q. What are the pressures in the Pictured Cliffs?

A. As far as pressures, I don't have the exact data, but I know that when we took over the Prespentt Gas Com Number 1 in the southeast of 21, it was having problems producing against line pressure. Line pressure in the area on the Prespentt was about 200 pounds, 200-pound line pressure. It would produce sporadically if you'd shut it in.

And since then, we've put a compressor on it to get it into the line, and it's doing about 100 a day, 100 MCF a day, right now.

Q. Do you have any idea what original pressures were in the Pictured Cliffs?

A. The published original pressure was approximately 700 pounds.

Q. And based on the Prespentt now, it's probably around 200, less than 200?

A. I'd figure maybe 200 or maybe a little above, because it could produce against line pressure, but for a short period of time.

Q. Okay. Were Exhibits 7 and 8 prepared by you?

A. Yes, they were.

Q. And in your opinion is the granting of Cross Timbers' Application in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I'd move the admission of Exhibits 7 and 8.

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

Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

CROSS-EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Voigt, prior to this case were you involved as a reservoir engineer in Pictured Cliff wells?

A. Yes, I have drilled some other redrills in the area and some 160-acre Pictured Cliffs wells.

Q. And that is for Cross Timbers?

A. Yes.

Q. Do you have experience in the Pictured Cliff with any other company?

A. No, I have not.

Q. And how many wells have you been involved in that were Pictured Cliff wells?

A. Approximately -- Let's see, probably eight to ten.

Q. Were any of those wells drilled in areas where there was a Fruitland Coal gas formation above the PC?

A. Yes.

Q. That is a common occurrence in your experience?

A. That is common in the Basin.

Q. Okay. Your focus of the assessment of risk is associated only with the Pictured Cliffs sand, true?

A. Yes.

Q. When we look at that assessment, you've reached certain conclusions based upon Exhibit 8?

A. Yes.

Q. Some averaging of offset wells. It does not include the Trujillo well in this spacing unit, does it?

A. No, it does not.

Q. Give me those numbers again, let's make sure I have those.

A. As far as the Trujillo?

Q. Yes, sir. When we look at the Trujillo, you've

got a cum of 952 million?

A. -- million cubic feet, yes.

Q. All right. And you estimate what for its ultimate recovery?

A. For the new well?

Q. For the old well?

A. For the old well, it is that number, 952, because it is a plugged well.

Q. Is the Trujillo well a candidate for any kind of restimulation or refracture treatment in the PC?

A. No, since the well is P-and-A'd, we will not re-enter.

Q. What accounts, in your opinion, for the fact that that is a wellbore that has been abandoned?

A. It is listed on the OCD list of plugged and abandoned wells, and our field people have gone by the location, and there is a plug-and-abandonment marker there.

Q. Why doesn't it represent an opportunity to again produce out of the PC?

A. Because of the fact that we do not know why it was plugged. If there were casing problems, you know, due to a casing leak or something like that, if you were to re-enter that, that would increase your costs, could increase your costs quite significantly, and you'd probably end up redrilling a well if you had significant problems --

Q. Have you plotted the Trujillo's production over time?

A. Yes.

Q. Have you established a decline curve for that well?

A. For that well, yes.

Q. Is there anything in that signature that causes you to believe that its abandonment is attributed to anything other than depletion?

A. Yes, it was producing at about -- prior to 1981 at about 70 to 80 MCF a day. And then, of course, you go through the curtailment period in the Basin, so it's kind of off and on. But when you pull out of the curtailment period, it has some sporadic production there, and a lot of times we have found that to be, you know, either mechanical problems with the wellbore or such of that. Without the well files, I couldn't really tell.

Q. Was that well stimulated or fracture-treated?

A. Yes, it was.

Q. In what way, do you recall?

A. I think it was -- The records that I have is that it was sand-frac'd.

Q. When you associate a risk to your well, the new one that's the subject of this hearing --

A. Yeah.

Q. -- are you in agreement with Mr. Hosey that you, in fact, are going to confine the Pictured Cliff reservoir?

A. Yeah.

Q. And that the risk associated with it is whether there's enough remaining recoverable gas to make it profitable?

A. Yes.

Q. Under your analysis, your initial rate for this well is estimated to be what, sir?

A. Approximately 150 to 200 MCF a day.

Q. And what did you estimate for a potential EUR on this new well?

A. Between 350 and 400 million cubic feet.

Q. If it achieves that level of success, how many times its cost will it recover?

A. I have that information. It appears that the net cash flow would be about $175,000.

Q. Its return on its investment is what?

A. Approximately 23 percent.

Q. Is there any potential that this Pictured Cliffs completion would communicate with the Fruitland Coal Gas Pool?

A. I do not foresee that.

Q. And why do you not foresee that?

A. Some of it has to do with the stress differences

between the zones. When you do stimulate a zone, the Pictured Cliffs has a stress of about .65 p.s.i. per foot, the Fruitland Coal is more like about a p.s.i. per foot. So naturally if you do crack a rock open, if it wants to go towards the Fruitland Coal, it's going to tend to stay in the PC because of the stress differentials; it's just an easier path for it to take.

Q. Have you designed your frac treatments so that it will maintain that separation?

A. I believe so.

Q. Let's discuss how you propose to do that. Do you have a copy of your completion information?

A. Yes.

MR. KELLAHIN: It's not in the record yet, Mr. Examiner, but if you'll allow me to do so I'll mark this as SG Exhibit Number 1. If I may show it to Mr. Voigt.

Q. (By Mr. Kellahin) We'll talk about the details of the completion report in just a minute, Mr. Voigt.

If the geologist gives you an anticipated separation between the Coal and the PC of about 18 feet --

A. Yeah.

Q. -- and you can re-verify that with your open-hole logs --

A. Yes.

Q. -- have you gone to the effort to design a

potential frac treatment that will maintain the separation between the PC in this well and the Fruitland Coal Gas above it?

A. What we're -- On our frac job we're pumping a typical Pictured Cliffs frac in the area.

Q. Atypical or a typical?

A. A typical.

Q. Okay, a standardized frac treatment?

A. Yeah, yeah.

Q. And what would you characterize to be a standard frac treatment in the PC?

A. Per foot of perforated interval, typically, the sand volumes are of about 2500 to 3000 pounds per foot.

Q. What are the other components of making it a standard frac treatment?

A. It's a foam job, and typically on zones that are lower pressure you like to pump a foam frac job so that you can recovery the frac fluids back as quick as possible. The energized fluid helps bring it back.

Q. Do you propose to set in place any procedure or process by which, after you conduct the frac, you can run some type of survey to see actually where those fracs were propagated and their extent and orientation?

A. Not at this time. From what we've seen on our fracs on the PC wells that we've done to this point, we

have not seen high pressures when the frac job is done, as far as a frac gradient. They're typically calculating out to be about a .6 to .65 gradient, whereas in the Fruitland Coal when we pump jobs on those we'll see a p.s.i.-per-foot-type gradient.

Q. Let me understand your point of view as a reservoir engineer. In terms of the data --

A. Yes.

Q. -- that you would get back on a PC well after frac stimulation, that would give you a belief that you've communicated with the Coal, what would you see?

A. What are you talking about, like a radioactive tracer survey or --

Q. No, sir, I haven't gotten there yet.

A. Oh, okay.

Q. What I'm asking you is, an after-frac treatment, you're going to get some data back from your PC well.

A. Yes.

Q. Would the absence of water production --

A. Yes.

Q. -- be an indication that you're not in the Coal?

A. Yes.

Q. Is this an area of the Coal where it's not yet dewatered?

A. Yes, I believe so. There is not as much

production here and it hasn't been producing for a long period of time like other areas.

Q. Okay. So PC production would be water-free?

A. It should be virtually water-free.

Q. "Virtually" meaning what?

A. Meaning, you know, after you recover the load in some areas we see maybe a barrel of water a day.

Q. Okay.

A. You know, half a barrel to a barrel. So where your Fruitland Coal wells are more like, you know, 50 barrels a day or higher when they first come on.

Q. That would be data that would indicate communication with the Coal. Is there anything else, other than water production, that would give you an indication as a reservoir engineer that you've communicated with the Coal pool?

A. Gas analysis, because they're different BTU content.

Q. You're going to look at the BTU?

A. Yes, we have to do BTU for the gas company anyway, or the pipeline company anyway.

Q. And what would you expect to be the BTU content of a Pictured Cliff well only?

A. About 1100 BTUs.

Q. And if it's communicated with the Coal, what

would you see? An increase in that number, or a decrease?

A. A decrease.

Q. It would be a decrease?

A. Because Coal is a methane gas, so it's lower BTU content.

Q. And what range of decrease would be a signature to you that you had communicated with the Coal?

A. Since the Coal is at higher pressure and everything, I would expect it to be very close to the 1000 BTU, which is the coalbed methane, very close to that if you communicated, because you should be getting more gas out of it than you would out of the PC.

Q. All right, so if on the pressure component, then, you see a higher pressure than you anticipate, 200 pounds plus, that would be indication of communication with the Coal?

A. Yes.

Q. So we have a water-issue component?

A. Yeah.

Q. We have a pressure component, you have a BTU component. Is there anything else that we'd look for as a reservoir engineer to distinguish PC from the Coal in terms of a communication issue?

A. Not to my knowledge.

Q. Are you familiar with the Pendragon decision by

the Division, Mr. Voigt?

A. Just like Mr. Hosey, vaguely.

Q. You've read through it?

A. Yeah, glanced through it.

Q. All right.

A. There's also production, just came to my mind, production character. A Coal well, as it dewaters, it will tend to ramp in production and then flatten out and go off on a decline, where a PC well will come in and go on an initial decline right -- you know, pretty close, right off the first few months or something, you'll start seeing some decline in the well.

Q. Do you have sufficient data on the SG Methane Coal Gas well to give you a database by which you then can compare your well to their well to make sure you have your separation?

A. As far as -- I just have copies of the logs. I don't have, as far as their reports, gas analysis, stuff like that --

Q. Is there any more information I can get for you that will aid you in making sure that your well is separated from theirs?

A. Probably the information we just talked about as far as water production, current water production or water production back in the past, gas analysis on the well.

Q. Would it be definitive, Mr. Voigt, if you were to tag your frac material with a radioactive tracer so that when it's introduced into the reservoir you could run an after-frac treatment survey of some type to see if you actually had moved beyond where you intended to go?

A. My experience with radioactive tracer surveys, and the main reason I use them, is to see if I've gotten every one of my perforations stimulated --

Q. Yes, sir.

A. -- if it's entered that. Since you only have a few inches of investigation, you know, behind the pipe, as far as growth upwards I don't really see that as a great evaluation tool. I mean, it could be used, but there are some problems with using it.

Q. The after-frac-treatment survey, then, will not trace radioactive material beyond the near wellbore of the well?

A. Correct.

Q. So you can't trace it out to see how long a frac you have?

A. No.

Q. Is there any other method by which we can determine the actual extent, height and length of the fracs?

A. You can take the data and model it afterwards.

Q. Well, modelers will do different things --
A. Yeah, it's --
Q. -- and then you and I could debate what it says.
A. You know, tweak and -- you know, knob-tweaking-type process.
Q. Are there any of the criteria we have overlooked in trying to distinguish a Pictured Cliff well from one that's producing just Pictured Cliff to one that's communicated with the Coal Gas Pool?
A. Not to my knowledge.
Q. Okay, we've hit them all, right?
A. Yes.
Q. Do you use compression on any of these Pictured Cliff wells?
A. Yes, we do, because of the high line pressures in the area.
Q. All right, sir, let's quickly go through what I handed you, was the completion summary.
A. Yes.
Q. You provided that to SG Methane, did you not?
A. Yes.
Q. So this is your proposed completion?
A. It's a kind of a generic completion, because we don't know the depths that we'll encounter the PC or the perforations we're going to have, but it's a generic

procedure.

Q. Let's focus the Examiner's attention on having you summarize for us that portion of the completion protocol that focuses on the fracture stimulation.

A. Yes.

Q. Describe for us in a summary way what you're proposing?

A. We propose to do a 70-quality foam frac job, with approximately 64,000 gallons of fluid and 150,000 pounds of proppant, and that's kind of based on encountering 50-plus feet of Pictured Cliffs pay.

Q. This is your standard, if you will, for Pictured Cliff?

A. Yeah, this is our standard, and it's taken from other operators in the Basin and the service companies of what is being pumped, effectively, on the PC wells.

Q. Okay. When we apply this standard to the PC, is there any estimate, report of frac design so that we know what they estimate to be the length and the height of these?

A. I do not have a copy of that, and I don't know if our field people had them, you know, run the theoretical model to see what it would do.

Q. Yes, sir, there must have been some theoretical model in order to design this level of frac, right?

A. Yeah, at one point in time, yeah.

Q. Yes, sir. Would you please research that for me and provide me a copy?

A. Sure.

Q. Is there any other potential productive formation for this well, Mr. Voigt, other than the PC?

A. No, we do not own any rights above the PC.

Q. And when we look at the cross-section, Mr. Hosey has defined a Pictured Cliffs sandstone that he stippled in, and that, in fact, is the target?

A. Yes.

Q. We're not in an area where we have an upper and a lower sand in the PC?

A. No.

MR. KELLAHIN: Okay. Thank you, sir. No further questions.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Voigt, you said you've drilled eight to ten PC wells in this area?

A. Some of them have been in 27 North, 10 West, and 28 North, 10 West. And we just recently drilled a well -- I believe it was Section 26, in this township.

Q. 26, okay.

A. And we've participated in some Pictured Cliffs

wells in the Basin also.

Q. And these PC wells that you drilled, is this the typical frac stimulation that you would do on these wells?

A. Yes.

Q. And have you in your experience seen any -- have you -- in all these frac jobs, have you in your opinion seen any communication between the PC and the Coal?

A. Not to my knowledge, not looking at the frac jobs. Most of the initial shut-in pressures have a lot lower gradient than what you'd expect in a Fruitland Coal.

Q. You've not seen any of the other indicators that might show communication?

A. No. A lot of these wells are recent wells, too, just drilled this year, a lot of the wells that I have done this year, so far.

Q. If you were to establish communication, is there a way to correct that?

A. As far as -- I don't think you could ever go back and really correct it if you did establish communication.

Q. You'd probably have to P-and-A the well --

A. Yeah.

Q. -- make some other kind of arrangement for the other interest owners, I assume?

A. Yes.

Q. Do you know if these Coal wells in this area

produce water?

A. The Coal wells?

Q. Right.

A. I haven't researched the Coal wells per se, but I have researched the PC wells. Most of the Coal wells do produce water in the Basin, especially initially while they're dewatering.

Q. Some areas of the Coal, it's my understanding, don't produce a lot of water.

A. Yeah.

Q. I don't know if this is one of those areas or --

A. Yeah, I haven't researched that in depth.

Q. Is the pressure in the Coal, I assume, higher than the PC pressure?

A. It should be, just due to the time period of production of the Coal in the area.

Q. What would you assume that Coal pressure to be? Do you have any idea?

A. The original pressure in the Pictured Cliffs was 700. I would expect the Coal to be somewhere probably around that, since it has not been depleted. I know most of SG's wells were drilled in early to mid-1990s in this area.

Q. The existing Coal well in the south half of Section 21, do you know what that's producing, by any

chance?

A. In the southwest --

Q. Yes, sir.

A. -- of 21? That is producing out of the Fruitland Coal. What it is producing?

Q. Right.

A. Approximately, I think an average, 156 was what I saw before.

Q. Your geologist testified that there may be some thin Coal sections lower than what we're calling, I guess, the basal Coal?

A. Yeah, that thicker basal Coal --

Q. Right.

A. -- that he has highlighted.

Q. If those do exist in your proposed wellbore, does it concern you anymore about the frac job that you're going to put on that well?

A. No --

Q. You're still --

A. -- just due to the stress differentials.

Q. Even though they might be in closer proximity?

A. Yeah.

EXAMINER CATANACH: I don't have any other questions.

Do you --

MR. BRUCE: I just have a couple of questions.

FURTHER EXAMINATION

BY MR. BRUCE:

Q. On the issue of risk, Mr. Voigt, now, as you answered to Mr. Kellahin, cross-timbers did provide this completion procedure to --

A. Yes.

Q. Were you also involved in a phone conversation with SG Methane representatives --

A. Yes.

Q. -- earlier this week?

A. Yes.

Q. Did they indicate they would join in your well?

A. They indicated that they more than likely would not.

Q. More than likely would not join in the well?

A. Yeah, that was my understanding.

Q. And was the stated reason that they believe the Pictured Cliffs is depleted in this area?

A. Yes.

Q. And again, that's one of the main components of risk in drilling this well?

A. Yes.

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

EXAMINER CATANACH: Okay, this witness may be

excused.

Gentlemen, would you like to make any statements at this time?

MR. KELLAHIN: Mr. Examiner, on behalf of SG Methane, we were involved in the compulsory-pooling portion of this case. Our principal concern, however, is to have Cross Timbers maintain the separation between the Pictured Cliff Pool and the Coal Gas Pool where we have a well operating in the same quarter section.

And we'll make our decisions pursuant to the compulsory pooling order. I think there's arguments that the risk is substantially diminished. Cross Timbers is going to find the reservoir, they estimate by their own calculations this is a profitable well, it is not highly expensive, and they have a substantial profit to be realized.

We think a reduced risk factor penalty is appropriate in circumstances like this, and we appreciate the fact that they intend to do their best to maintain the separation between the Fruitland Coal and the Pictured Cliff. And let's hope that happens.

EXAMINER CATANACH: Mr. Bruce?

MR. BRUCE: Mr. Examiner, Cross Timbers has the legal right to drill to the Pictured Cliffs and plans to drill and complete a Pictured Cliffs well. Production

history from the wells in this area show typical Pictured Cliffs production, with low or no water production and typical BTU contents.

Based on this, and based on its operating practices, Cross Timbers believes it will complete a PC well, and we ask you to approve the pooling Application.

As far the risk goes, we think 200 percent is fair and reasonable, based on the dangers of being depleted in this area, based on SG Methane's own indication it will go nonconsent because of the risk involved, because of the depletion risk, we think that justifies the 200-percent penalty.

Thank you.

EXAMINER CATANACH: Mr. Bruce.

Anything further in this case?

MR. KELLAHIN: Mr. Examiner, we'd ask that you admit SG Methane's Exhibit Number 1, which is Cross Timbers' proposed completion procedure.

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

And there being nothing further, Case 12,428 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:33 a.m.)

* * *

I hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12428, heard by me on June 15 2000.

David K. 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 June 16th, 2000.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002