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. 11,772
APPLICATION OF RICHARDSON OPERATING COMPANY FOR DOWNHOLE COMMINGLING AND AN UNORTHODOX COAL GAS WELL LOCATION, SAN JUAN COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 15th, 1997

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, May 15th, 1997, 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

May 15th, 1997
Examiner Hearing
CASE NO. 11,772

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	16
Exhibit 2	7	16
Exhibit 3	8	16
Exhibit 4	8	16
Exhibit 5	8	16
Exhibit 6	9	16
Exhibit 7	10	16
Exhibit 8	10	16
Exhibit 9	13	16

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A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 8:36 a.m.:

EXAMINER CATANACH: At this time we'll call Case 11,772.

MR. CARROLL: Application of Richardson Operating Company for downhole commingling and an unorthodox coal gas well location, San Juan County, New Mexico.

EXAMINER CATANACH: Appearances in this case?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan. We represent Richardson Operating Company in this matter, and I have one witness.

EXAMINER CATANACH: Any additional appearances?

Will the witness please stand to be sworn in?

(Thereupon, the witness was sworn.)

PAUL C. THOMPSON,

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

EXAMINATION

BY MR. CARR:

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

A. My name is Paul C. Thompson.

Q. Mr. Thompson, where do you reside?

A. Farmington, New Mexico.

Q. By whom are you employed?

A. I'm the President of Thompson Engineering.

Q. And what is the relationship of Thompson Engineering in this matter to Richardson Operating Company?

A. I've been hired as a consultant by Richardson to present the merits of this case.

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

A. Yes, I have.

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

A. Yes, they have.

Q. Are you familiar with the Application filed in this case on behalf of Richardson?

A. Yes.

Q. And are you familiar with the proposed Bushman "6" Federal Well Number 1?

A. Yes, I am.

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

EXAMINER CATANACH: Yes, they are.

Q. (By Mr. Carr) Mr. Thompson, would you initially summarize for the Examiner exactly what it is Richardson Operating Company seeks with this Application?

A. Richardson Operating Company seeks two things

from this Application. The first one is the authority to downhole commingle gas production from the conventional Pictured Cliffs Fruitland Sand formation, the Twin Mounds Pool, with gas production from the Basin Fruitland Gas Pool.

Both -- The Pictured Cliff is 160-acre spacing, and the Fruitland Coal is a 320. The Pictured Cliff is the southeast quarter of Section 6, and the Fruitland Coal would be the entire east half of Section 6.

They also seek approval for the off-pattern Fruitland Coal location as the wells to be drilled in the southeast quarter of this section.

Q. What is the proposed location for this well?

A. The well is proposed to be drilled at 1041 feet from the south line, 1136 feet from the east line, which is Unit P of the Section 6.

Q. Is the ownership common throughout the east half of Section 6?

A. Yes, it is.

Q. Let's refer to what has been marked for identification as Richardson Operating Company Exhibit Number 1. Would you identify and review this for Mr. Catanach?

A. Exhibit Number 1 shows the proposed location of the Bushman Federal 6-1 in the southeast of the southeast

of Section 6.

It also shows the dedicated spacing unit. Actually, it's only outlined on my copy for the east half, which would be the Fruitland Coal. The southeast quarter would be dedicated to the Pictured Cliffs.

It also shows the offset operators and offset wells. The only two producing wells is the Dugan Mayre Number 1, in the southeast of Section 31 to the north, and then a Gallup well, Keystone Kirtland Number 10 well, to the south of the proposed well.

Q. Let's go to Exhibit Number 2. Could you explain to the Examiner what this shows?

A. Exhibit Number 2 is a land plat of the surface of the northeast quarter of Section 6.

As you can see from that plat, those are -- is a subdivision divided up into very small lots, primarily a trailer park.

Richardson contacted the surface owners of the northeast section, and they strongly opposed the drilling of a well in their neighborhood.

Q. What is the second page of Exhibit Number 2?

A. The second page is the surface ownership plat of the southeast quarter of the section, and it's got the proposed location of the Bushman Federal well down in the southeast quarter. You can see those are considerably

larger plots.

Q. The proposed location, in fact, is in a low spot that would not be visible to the residents in the northeast quarter of this section; is that not right?

A. That's correct. That puts it out of view and also about the same distance from a school, a church and the residences.

Q. Could you identify Richardson Exhibit Number 3?

A. Richardson Exhibit Number 3 is the surface damage agreement that has been signed by all nine members now, of the Bushman family.

Q. Is Exhibit Number 4 a copy of the Application for downhole commingling that was filed in this case?

A. Yes, it is.

Q. And was this Application mailed to all owners who are entitled to notice pursuant to OCD rules?

A. Yes, it was.

Q. Is the offset ownership the same for each of the zone that we propose to downhole commingle?

A. It is where there are operators. As you can see from Exhibit 1, there's a lot of space where there are no existing wells.

Q. And can you identify for me what has been marked as Richardson Exhibit Number 5?

A. Exhibit Number 5 is a list of the ownership in

the east half of Section 6. It lists the royalty as the Bureau of Land Management, one overriding royalty owner and one working interest owner.

Q. And then what is the next page?

A. On the next page are the offset operators and mineral owners to the proposed east-half-section dedication.

Q. And these are the parties to whom the Application was provided?

A. Yes, that's correct.

Q. Is Exhibit Number 6 a copy of the return receipts confirming, in fact, that the Application was provided to these individuals by certified mail?

A. Yes, it is.

Q. Could you explain why this matter is being brought before the Division for hearing, instead of being submitted for administrative approval?

A. Richardson has an lease expiration date of May 31st of this year, and they wanted to be sure that they received NMOCD approval prior to the drilling deadline. Even though they anticipated no opposition to their Application, they felt that it was safer to go ahead and schedule the matter for hearing.

Q. And Mr. Kellahin advised them we had to come here today and put the case on; isn't that right?

A. Yes, that's correct.

Q. And it also -- Because of the off-pattern Fruitland Coal well, there was also the need to come to the Division for approval for that part of this matter as well; is that right?

A. That's correct.

Q. Could you review for the Examiner the proposed completion for each of the zones in this well?

A. Yes. The well is planned to be drilled to a depth of 140 feet below the top of the Pictured Cliff, a total depth of approximately 600 feet. The well will then be cased and cemented back to surface. Both the Pictured Cliff and Fruitland Coal zones will then be stimulated individually with nitrogen foam fracs.

After that, the upper zone, the Fruitland Coal, will be flow-tested, and then the bridge plug removed and both zones flow-tested together.

Q. I think at this time we ought to look at both Exhibits 7 and 8 together. I would ask you to identify what they are and then review the production summary for Pictured Cliffs wells and also look at the production forecast for this well.

A. Exhibits 7 and 8 are an attempt to show that drilling the Pictured Cliff formation by itself would result in a marginal well.

The first page of Exhibit 7 are the offsetting Pictured Cliff completions and then a summary of the cumulative production. All the wells have been either plugged or shut in, with the exception of the Mayre Number 1.

You can see that the production is fairly diverse across this area, from a low 38,000 MCF to a high of 114,000. That's over a period of 20 years.

So what I tried to do is take one of the better wells, the Bi-Knobs Number 1, and develop a production forecast, which is shown on the second page there, that would result in a cumulative production of about 100,000 MCF over a period of 10 years.

From that deliverability forecast and the AFE that's listed on the first page of Exhibit 8, I ran a cash-flow forecast for a Pictured Cliff completion only, which would be the second page of Exhibit 8. In that case, I used the deliverability forecast, you know, from Exhibit 7, $1.75 gas price. I factored out from the AFE, which is actually for the commingled well, the Fruitland Coal completion cost.

As you can see from the lower right-hand corner of that exhibit, that the well does not pay out. It actually has a negative rate of return.

Assuming that the Fruitland Coal production would

be equal to a Pictured Cliff production, I ran another cash-flow forecast where I essentially just doubled the deliverability, added in the Fruitland completion cost to the AFE, and that would be, then, the second cash-flow forecast on Exhibit 8.

In that case, the resulting cash-flow forecast shows that you have a payout of six years and a pre-tax rate of return of 13.2 percent.

Q. What kind of bottomhole pressures do you anticipate in each of the zones to be commingled?

A. Based on some of the reported data from the offset wells, we anticipate bottomhole pressures for both the Pictured Cliffs and Fruitland Coal to be 200 pounds.

Q. And so if the Application is granted with these pressures, there would be no potential for crossflow between the zones?

A. There should not be.

Q. Do you anticipate there would be any problem with the compatibility of the fluids that are produced and commingled in this wellbore?

A. No, we don't. We anticipate that both zones will produce some amount of water and gas.

Q. And is there any potential that the way you're proposing to downhole commingle these wells could, in fact, result in any reservoir damage to either of the subject

formations?

A. No.

Q. Let's turn to what has been marked as Richardson Exhibit Number 9, and just describe what this is, if you would, Mr. Thompson, and recommend to the Division how you believe an appropriate allocation formula should be developed.

A. Okay, this Exhibit Number 9 was prepared in anticipation for an administrative approval, you know, as an attachment to the regular form. So a lot of the things that are discussed in this have already been presented.

But primarily the problem in this area is that there is very little PC production history that you can go by, and there are no Fruitland Coal wells at all in the area, nothing you can really base an accurate allocation factor on.

So Richardson proposes to go ahead and individually stimulate the well and then test the Fruitland Coal individually, and then pull the bridge plug and test both the zones together and back into a Pictured Cliff test and then use the ratio of those actual well tests to allocate the production.

I discussed this with Ernie Bush in Aztec. He agreed that due to the lack of data in the area, that this was a reasonable allocation method.

Q. So you're recommending that the actual allocation formula be developed after the well has been completed in consultation with the District Office of the OCD in Aztec?

A. Yes, we do.

Q. Will commingling of the zones result in a zone being produced that otherwise economically be produced?

A. Yes. Obviously, the Pictured Cliffs formation by itself wouldn't be produced. However, the small production from the PC does help offset some of the risk involved in drilling a wildcat Fruitland Coal well.

Q. Commingling therefore will prevent waste?

A. Yes.

Q. Will the approval of the Application otherwise be in the best interest of conservation and the protection of correlative rights?

A. Yes.

Q. Do surface requirements make it essential to drill the well as proposed in the southeast quarter of Section 6?

A. Yes.

Q. Could the well be directionally drilled from the northeast quarter?

A. Due to the marginal nature of the well, we don't feel that's economically viable.

Q. At this point in time, is there other Fruitland

Coal development in this area?

A. At this time, no.

Q. So the drilling of this well is not going to disrupt any existing drainage pattern or development pattern in the area?

A. That's correct, this would be the first well within several miles.

Q. If, In fact, this off-pattern location is not approved, will Richardson be able to develop this acreage?

A. No, they feel like the chances of drilling a well in the northeast quarter are impossible. So if this well is not approved in this location, the reserves in the east half of the section will not be recovered.

Q. How soon did you say Richardson needed to actually commence the drilling of the well?

A. They need to have the well spudded by May 31st, 1997.

Q. And they are, therefore, requesting that the order be expedited?

A. Yes, please.

Q. Were Exhibits 1 through 9 either prepared by you, or have you reviewed them and can you testify as to their accuracy?

A. Yes, I prepared all the technical exhibits. Richardson prepared the land exhibits, and I have reviewed

them.

MR. CARR: May it please the Examiner, at this time we would move the admission into evidence of Richardson Exhibits 1 through 9.

EXAMINER CATANACH: Exhibits 1 through 9 will be admitted as evidence.

MR. CARR: That concludes my direct examination of Mr. Thompson.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Thompson, you said that you had contacted -- or Richardson had contacted the surface owners within the northeast quarter; is that correct?

A. Evidently. They started knocking on doors and asking questions and got very strong opposition. It would be really tough to find a place to put in there, the lots are so small.

This is really a trailer park. You would essentially have to move somebody off to find a place big enough to put a pad.

Q. Are you talking about the whole entire northeast quarter is composed of a trailer park? Is that your understanding?

A. Yes. You can see from the plat, Exhibit 2, that anything within the legal window there are very small lots.

Q. And this is within -- Is this within the city limits of Kirtland; is that right?

A. I believe so.

Q. And the acreage that you propose to drill on in this southeast quarter, you've gotten permission from the surface owners for that?

A. Yes, just in the last day we got the last two people signed up.

Q. And that -- In the southeast quarter there's no trouble with residences or anything like that?

A. Where the well is located is kind of in a little swale where it seems to be out of sight and far enough away from all the other activity there, it didn't seem to be too objectionable.

Q. Do you know if Richardson has obtained any permits necessary from the City or anything?

A. No, as far as I know, they've only applied to the BLM, and that permit should be approved in the next day or two.

I'm not really sure whether it's in the city limits or not. This is north of the highway, and whether it's a -- you know, annexed by the City of Kirtland, I'm not for sure on that.

Q. Mr. Carr asked you a question about directional drilling, and you stated that the reserves were too

marginal for that?

A. Yeah, it would be very difficult, first of all, to drill a well that's directionally drilled to a depth of 600 feet, you know, from that distance, for one thing. And if you added an extra $75,000 to $100,000 drilling costs there, even with the commingled production, neither one of those would be viable.

Q. Have you done an analysis of the reserves that might be recovered?

A. From the Fruitland Coal?

Q. It's really --

A. Well, the Pictured Cliff, we have just those few offset wells. I haven't done anything on the Fruitland Coal, due to lack of offsetting wells.

Q. Is there a reason why the Fruitland Coal hasn't been developed in this area?

A. I think it's very close to the outcrop. Some of the other operators think that the water production might be too high.

Q. So I mean, there's still a chance that we could get some Fruitland Coal development in this area?

A. Yes.

Q. How do you think that that off-pattern well is going to have an effect, or do you think it's going to have an effect?

A. I guess at this point it would be too early to tell, but I don't see this as being in the fairway where you're obviously going to be draining 320 acres immediately, so I don't really see a problem.

Q. Which direction would the outcrop be in? To the northwest?

A. It would actually be almost due west.

Q. Due west. Do you know how far that might be?

A. No, I'm sorry, I don't.

Q. And the well's only going to be 600 feet deep?

A. That's correct.

Q. Do you know if there's any fresh water in this area?

A. I don't know. There are -- You know, we're well above the river bottom where the well is located. There's no arroyos or anything running through here, but there could be some shallow groundwater.

Q. Have these -- There has been some other PC wells drilled in this area, right?

A. Yes.

Q. Just offsetting this?

A. Yes, five or six of them. Five of them. There was actually a PC well drilled in the southwest quarter of Section 6 that was never produced.

Q. Is that the Number 1 that shows on the map?

A. Yes.

Q. It never produced?

A. According to the Richardson people, they said that it was never actually stimulated; it was drilled, logged and plugged.

Q. The proposed downhole commingling is the only thing that's going to make this well economic; is that your testimony?

A. Yes.

Q. Mr. Thompson, do you know, on Exhibit C of Number 5, the offset operators, or the offset interest owners, are those -- do you know where those interest owners are, which acreage they control?

A. No, not exactly. Dugan Production is the operator of the well to the north.

Q. Uh-huh.

A. And they actually own the mineral interests, then, to the northeast as well.

There are no wells producing in the section just to the east of us, so I would assume that most of those individual people are in that area.

But you have to list the -- you know, the mineral owners if there's no operator.

Q. So you don't know exactly --

A. I don't have --

Q. -- where these interest owners are?

A. No, I don't have the individual lease map.

EXAMINER CATANACH: Mr. Carr, I think we probably need to get some more information on that if you can.

MR. CARR: I'll provide a map that identifies by tract who owns what.

EXAMINER CATANACH: Okay, just so we can make sure that the --

MR. CARR: Yes.

EXAMINER CATANACH: -- correct people were notified of this.

MR. CARR: Correct.

Q. (By Examiner Catanach) Mr. Thompson, is the Fruitland Coal in this area an area where the coal exhibits inclining producing rates?

A. This is a rank wildcat area. You could infer a lot of things based on other coal wells in the San Juan Basin, but actually there are no other wells anywhere near here that you could use for analogy.

Q. How close do you think the nearest coal well is?

A. When I talked to Ernie, asked him, you know, if he was aware of any coal wells, he said there was one drilled, oh, four or five miles south of here, near to the river, that was drilled, that tested and plugged. So I'd say well over five miles.

Q. Do you know how long the Applicant would propose to test the coal formation?

A. No, it's going to be, you know, kind of dependent on how the well will perform, I guess.

If you could get a stabilized test over a 24-hour period, I think they would assume that that's sufficient. And if -- As long as the well is fluctuating, I think they would continue to test it until they do get a stabilized rate.

Q. If the coal does exhibit inclining producing rates, how would you correctly allocate production from this well?

A. The only way you could do that, I guess, is, you know, a year or two in the future, if you notice that the production is significantly better than it was when it started, is that you'd have to go back in, pull the tubing and pump out, isolate the zones and re-test.

Q. Does the Pictured Cliffs in this area exhibit pretty standard decline rates?

A. Yeah, the -- for the most part. Actually, the five wells that were drilled were drilled during the Seventies, and so unfortunately, you know, their period of production kind of went through the Eighties, you know, when production was off, on, off, on, due to curtailments. And so as you look at the rate-time curves, there's quite a

bit of variability there.

But from that Bi-Knobs well, which is up to the northeast of this section -- it's the one I used for a type curve -- it was fairly consistent, had a fairly stable decline rate.

Q. Might it not be better to get a good test on the PC initially, and then --

A. Well, the PC will be the lowest -- the lower formation, so it will be very difficult to test it by itself if you have perfs open above it.

It would be better to back into that PC number, maybe, initially by subtracting the Fruitland rate from the total rate and using that as the initial Pictured Cliff production, develop a decline curve from that rate.

Q. Whenever you get around to actually going into the office and talking to Frank and Ernie about allocating, I mean, you guys can talk about some of these other methods and maybe propose something that would be --

A. Right, as the data becomes available it will be a little easier to make an informed decision, I believe.

Q. Okay. You said something about -- I'm not sure I caught it -- about the interest ownership between the zones. Is it, indeed, common?

A. It is common, in both spacing units.

Q. Okay, and this is a fee lease?

A. It's a federal lease.

Q. It's a federal lease. The whole east half is a single federal lease?

A. Yes, as well as part of the west half.

Q. Have you contacted BLM with regards to the proposed commingling?

A. Yes, they're aware of it, and they hope to approve our APD within the next day or two.

Q. When you go in and -- You're going to fracture-stimulate both zones?

A. Individually.

Q. Is there any chance of communication when you go in and frac?

A. I'm sure, yeah, there's a chance. We're going to make every attempt not to, but there's not a lot of barriers between the bottom of the Fruitland Coal Zone and the top of the Pictured Cliff sands, probably only about 10 feet.

But hopefully by keeping the rate low enough, you can keep the frac in the zones intended. But that's always a risk.

EXAMINER CATANACH: I think that's all the questions I have, Mr. Carr.

MR. CARR: That concludes our presentation in this case.

EXAMINER CATANACH: Okay, and you'll submit the map we talked about?

MR. CARR: Yes, sir.

EXAMINER CATANACH: All right. There being nothing further, Case 11,772 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:09 a.m.)

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I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11772, heard by me on May 15 1997.

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 May 17th, 1997.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998