

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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| IN THE MATTER OF THE HEARING |) | |
| CALLED BY THE OIL CONSERVATION |) | |
| DIVISION FOR THE PURPOSE OF |) | |
| CONSIDERING: |) | CASE NO. 11,106 |
| |) | |
| APPLICATION OF RICHARDSON |) | |
| OPERATING COMPANY |) | |
| _____ |) | |

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

September 29th, 1994

NOV 2 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, September 29th, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

ORIGINAL

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I N D E X

September 29th, 1994
 Examiner Hearing
 CASE NO. 11,106

| | |
|----------------------------------|------|
| | PAGE |
| APPEARANCES | 3 |
| APPLICANT'S WITNESSES: | |
| <u>DANA DELVENTHAL</u> | |
| Direct Examination by Mr. Carr | 5 |
| Examination by Examiner Catanach | 18 |
| REPORTER'S CERTIFICATE | 24 |

* * *

E X H I B I T S

| | Identified | Admitted |
|------------|------------|----------|
| Exhibit 1 | 7 | 17 |
| Exhibit 2 | 9 | 17 |
| Exhibit 3 | 10 | 17 |
| Exhibit 4 | 11 | 17 |
| Exhibit 5 | 12 | 17 |
| Exhibit 6 | 14 | 17 |
| Exhibit 7 | 14 | 17 |
| Exhibit 8 | 15 | 17 |
| Exhibit 9 | 15 | 17 |
| Exhibit 10 | 17 | 17 |

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A P P E A R A N C E S

FOR THE DIVISION:

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By: WILLIAM F. CARR

* * *

1 EXAMINER CATANACH: Call the hearing back to
2 order at this time, and we'll call Case 11,106.

3 MR. CARROLL: Application of Richardson Operating
4 Company for downhole commingling, San Juan County, New
5 Mexico.

6 EXAMINER CATANACH: Appearances in this case?

7 MR. CARR: May it please the Examiner, my name is
8 William F. Carr with the Santa Fe law firm of Campbell,
9 Carr, Berge & Sheridan.

10 We represent Richardson Operating Company in this
11 case, and I have one witness.

12 EXAMINER CATANACH: Additional appearances?

13 (Thereupon, the witness was sworn.)

14 MR. CARR: Mr. Examiner, as you are aware,
15 Richardson Operating Company is before you today seeking
16 authority to downhole commingle gas production from the
17 base of the Fruitland Coal Gas Pool and the West Kutz
18 Pictured Cliffs Gas Pool. The well in which we propose to
19 commingle production is the Ropco Federal 12 Well Number 2.

20 After we filed the Application for downhole
21 commingling, we discovered that the well location was also
22 unorthodox by 20 feet. It's 20 feet too close to the east
23 line of the dedicated acreage.

24 You will see that the well is located in an area
25 that is subdivided. It's within the City of Farmington,

1 and there are a number of surface conditions which dictate
2 most of the matters we're going to be bringing before you
3 today.

4 In any event, we filed a separate application
5 seeking approval of the unorthodox well location.

6 When the case was advertised, Mr. Stogner did not
7 advertise it as a separate case but reopened this case or
8 amended the Application in this case. That's set for the
9 examiner hearing -- the first examiner hearing in October.

10 We seek permission today to go forward with our
11 presentation. We will present the entire case, not only
12 our presentation in support of our Application for downhole
13 commingling, but also the data that we have in support of
14 the unorthodox well location.

15 At the end of the hearing, we would ask that the
16 case be continued to the October 13 examiner hearing.

17 With that, with your permission we will go
18 forward and present our case at this time.

19 EXAMINER CATANACH: Go ahead.

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

23 DIRECT EXAMINATION

24 BY MR. CARR:

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

1 A. My name is Dana Delventhal.

2 Q. And where do you reside?

3 A. I reside in Farmington, New Mexico.

4 Q. By whom are you employed?

5 A. I'm in the employment of Richardson Operating
6 Company as an independent consultant.

7 Q. And you're an independent consulting engineer in
8 Farmington?

9 A. That's correct.

10 Q. Have you previously testified before this
11 Division?

12 A. Yes, I have.

13 Q. At the time of that prior testimony, were your
14 credentials as a petroleum engineer accepted and made a
15 matter of record?

16 A. Yes, they were.

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

19 A. Yes, I am.

20 Q. Have you prepared certain exhibits for
21 presentation here today?

22 A. I have.

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

25 EXAMINER CATANACH: They are.

1 Q. (By Mr. Carr) Miss Delventhal, would you
2 initially briefly summarize what Richardson seeks in this
3 case?

4 A. Richardson Operating Company is seeking authority
5 to downhole commingle the Pictured Cliff and
6 Basin-Fruitland Coal construction in the Ropco Federal 12
7 Number 2 well. This well is not yet drilled but will be
8 drilled shortly.

9 We are also requesting approval for an unorthodox
10 location on the same well.

11 Q. Let's go to what has been marked as Richardson
12 Exhibit Number 1. Would you identify this and review it
13 for Mr. Catanach?

14 A. Exhibit Number 1 gives you a layout of Section 12
15 of Township 25 North, Range 13 West. The east half is
16 dedicated to the Basin Fruitland Coal, and the northeast
17 quarter is dedicate to the Pictured Cliffs in this
18 development well.

19 The individual tract ownerships are outlined and
20 colored and there's a breakdown attached to the map as
21 well.

22 The working interest owner in both horizons is
23 common at 100 percent Richardson Operating Company.
24 However, some overriding royalties vary between the two
25 wells because of the spacing differences.

1 Q. And that's also set out on the sheets attached to
2 this plat?

3 A. That's correct.

4 Q. If we look at northeast quarter of Section 12,
5 there are four orthodox locations or blocks that indicate
6 orthodox locations?

7 A. Correct. The smaller boxes indicate legal
8 drilling spacing for the Picture Cliff horizon within that
9 160-acre quarter section.

10 The larger box is the legal Fruitland Coal
11 development acreage. As has been presented earlier, this
12 location is highly populated, very well developed and
13 subdivided. We've had quite a lot of difficulty in finding
14 anyplace that landowners are willing to allow a well to be
15 drilled. We did finally negotiate and get approval for the
16 southeast drilling opening for the PC.

17 Once the on-site was conducted, we had to shift
18 the well site 20 feet to the east, making it 20 feet
19 unorthodox, due to drainage considerations, and we'll
20 present that later in this case.

21 Part of the stipulations for being allowed to
22 drill in that area is that all surface facilities will be
23 placed off site, and all that will be left on the location
24 is a wellhead only.

25 As soon as the well has been drilled, the reserve

1 pit must be pumped dry and reclaimed immediately, so that
2 the surface disturbance is as small as possible.

3 Because of this, it is not possible for us to
4 drill two separate wellbores for Pictured Cliff and for a
5 separate Fruitland Coal development.

6 If we were forced to drill a separate wellbore
7 for the Fruitland Coal, we would be forced to move to the
8 east and drill it directionally to reach the reserves in
9 that northeast quarter and be legal development for the
10 Fruitland Coal.

11 Q. If we look at this exhibit, there is no standard
12 location available in the Pictured Cliffs in the northeast
13 quarter; is that correct?

14 A. That's correct.

15 Q. And there is in the east half no standard
16 location available to develop this acreage in the Fruitland
17 Coal?

18 A. That's correct.

19 Q. All right. Let's go to Exhibit Number 2. Would
20 you identify and review that, please?

21 A. Exhibit Number 2 shows a nine-section plat, with
22 offset operators, producing wells around the area.

23 It's fairly well developed. Most of the wells
24 are older Dakota production and older Pictured Cliffs
25 production.

1 There has been some Fruitland Coal developed, you
2 can see, to the east and so the south of this spacing unit.
3 Those wells are recent, just the late, 1992-93 development
4 wells.

5 Q. The well is unorthodox by 20 feet to the east?

6 A. Correct, which moves the well closer towards
7 Gilbreath, who has ownership over there, to the north
8 towards Halwood, and let's see, I think the BHP to the
9 south.

10 And we've obtained waivers from these three
11 operators, waivers against any objection to the unorthodox
12 location.

13 Q. And those waivers will be presented later as
14 Exhibit 4?

15 A. That's correct.

16 Q. Let's go to Exhibit Number 3. Would you identify
17 and review this for Mr. Catanach, showing the topographic
18 conditions in the immediate area the proposed well?

19 A. Exhibit Number 3 is a surveyor's plat of the
20 proposed location. This is the location agreed to on the
21 federal on-site inspection.

22 As you can see, the location is outlined fairly
23 small even for the drilling pattern, approximately 175 feet
24 by 80 feet.

25 Just to the west is a wash or a draw. We had to

1 move the location up and to the east to stay outside this
2 drainage. The reserve pit of course is put on the high
3 side of the location.

4 We're also limited by road easements and multiple
5 water lines crisscrossing this area.

6 Q. The proposed well is actually in the center of
7 the exhibit where --

8 A. Right. It is outlined by the dot, and the
9 elevation is shown as 5525.

10 Q. And in the block in the center of the plat is the
11 actual location that will be used to drill the well?

12 A. That's correct.

13 Q. And then if we go off to the west, we see a line
14 coming down, running north to south, and that indicates
15 basically the bottom of the draw?

16 A. That's correct.

17 Q. And then these kind of dotted lines that go off
18 are contours showing that the land slopes up as we move
19 towards the well location?

20 A. That's correct.

21 Q. And then would you just identify Exhibit Number
22 4?

23 A. Exhibit Number 4 is the waivers for the
24 unorthodox location we received from Halwood, Mr. and Mrs.
25 Norman Gilbreath and BHP, which are the operators of which

1 we are encroaching upon.

2 Q. Let's go now to Richardson Exhibit Number 5, the
3 three economic cases. Would you review each of these cases
4 for Mr. Catanach?

5 A. Yes, sir. We took a look at three possible ways
6 of developing both the Pictured Cliff and Fruitland Coal
7 reserves which we have -- control.

8 The first would be our proposal, a commingled
9 wellbore combined reserves of 2.5 BCF. We show it's a 9
10 profitable venture.

11 Case Number 2, as I said, if we had to drill
12 separate wellbores, we would be forced off-section and have
13 to drill directionally to reach our Fruitland Coal
14 reserves. In that case, Table B, those figures are the
15 stand-alone Pictured Cliff well economics, which you can
16 see that we would drill a Pictured Cliff stand-alone
17 vertical well, even if we were unable to develop the
18 Fruitland Coal reserves. It is an economic venture.

19 The Table C figures under Case 2 are the
20 economics for the directional Fruitland Coal well. As you
21 can see, the Fruitland Coal is more marginal than the
22 Pictured Cliff, and of course there would be additional
23 expenses, which leads the net profit to be negative.
24 Therefore, we would not drill the Fruitland Coal under that
25 scenario.

1 The third possible case for developing these
2 reserves would be to drill the Pictured Cliff as-is, and at
3 the end of its life when it becomes depleted, at that time
4 abandon it, move up and produce the Fruitland Coal.

5 As you can see, the PC's well life is in excess
6 of 20 years before abandonment. By postponing those
7 reserves into the future, the present value of that
8 scenario is fairly low to the Fruitland Coal. So both
9 working interest and royalty interest would be losing a
10 tremendous amount of present value if we adopt that method.

11 For these reasons, we would propose to commingle
12 production, provided that bottomhole pressure and
13 correlative rights are maintained.

14 Q. If we look at three cases, the first case is the
15 only scenario under which the Fruitland Coal would in fact
16 be developed; is that right?

17 A. That's correct.

18 Q. If the Fruitland Coal is not developed, can you
19 estimate for Mr. Catanach the volume of gas that in fact
20 could be left in the ground?

21 A. We estimate that roughly .6 BCF of recoverable
22 reserves will be attributed to the Fruitland Coal. Unless
23 able to commingle, this volume would probably never be
24 produced.

25 Q. And therefore wasted?

1 A. Correct.

2 Q. All right. Let's go to what has been marked
3 Richardson Exhibit Number 6. Identify and review that,
4 please.

5 A. Exhibit Number 6 is a proposed wellbore diagram.
6 This is what we would anticipate the well would look like
7 following completion and following commingling approval.

8 Basically, it's a 7-inch casing set to 200 feet,
9 4-1/2 casing run to total depth. There would be rathole
10 allowed for bottomhole pump if that becomes necessary.

11 The perforations are between 1419 for the
12 Fruitland Coal and the top at 1466 for the Pictured Cliffs.
13 As you can see, there's not much separation between the two
14 zones.

15 Q. All right, let's go to Exhibit 7, and I'd ask you
16 to review your bottomhole pressure information for the
17 Examiner.

18 A. Richardson Operating operates two offsetting
19 wells, one of which is a Fruitland Coal, and one is a
20 Pictured Cliff. Both are marked an Exhibit Number 2.

21 The Ropco Fruitland Coal well, we took a
22 bottomhole pressure on subject well and found it adjusted
23 to 1465 feet to be 210 p.s.i.g.

24 As you can see, the bottomhole pressures out here
25 are fairly low. It's depleted formations.

1 The Pictured Cliff well that's in the same
2 section with the Ropco 12 Number 1 well, we obtained a
3 bottomhole pressure of 241 p.s.i.g. So the bottomhole
4 pressures would be well within the limits of commingling
5 approval.

6 Q. And with this slight differential, no potential
7 exists for cross-flow between the commingling zones?

8 A. No, sir.

9 Q. All right, identify Ropco Exhibit Number 8,
10 please?

11 A. From the same two offsetting wells we have a gas
12 analysis from both formations showing that both are similar
13 type gases of similar value.

14 Q. Again, no compatibility problems --

15 A. No, sir.

16 Q. -- pose a threat?

17 A. Pose a threat? 16

18 A. No, sir. 17

19 Q. If you would now go to Exhibit Number 9 and
20 review for the Examiner how you would propose to allocate
21 production between the zones.

22 A. Exhibit Number 9 is a proposed allocation method.
23 It isn't the proposed formula. We would recommend that
24 that formula be approved by the district office, pending
25 the drilling and individual test of each horizon in the

1 particular well. But this is a procedure of allocation
2 that's used commonly in this area.

3 Basically, since there's extensive history in the
4 Pictured Cliff horizon, offsetting decline curves,
5 cumulative recovery estimates are available in the Pictured
6 Cliff. Basically, the Pictured Cliff-producing scenario
7 would be estimated, and then any additional gas would be
8 attribute to the Fruitland Coal, since no decline history
9 is available for the Fruitland Coal.

10 Basically this entails estimating the ultimate
11 recovery of the Pictured Cliff, which is based off of
12 offsetting wells and individual log analysis from the
13 drilled well, estimation of reservoir pressures which we
14 have obtained, then an individual production test from both
15 the PC and Fruitland Coal once the well is drilled, to get
16 an IP figure. And based on this, we would get a decline
17 rated for the Pictured Cliffs.

18 Therefore, that gives all the information
19 available for a total decline history on the Pictured Cliff
20 formation.

21 Then month by month production would be allocated
22 based on what the Pictured Cliff is estimated at, and the
23 additional would be attributed to the Fruitland Coal.

24 Again, the actual figures will vary by what we
25 find once we drill the well, but this shows how the

1 calculation would be prepared.

2 Q. Miss Delventhal, is Exhibit Number 10 a copy of
3 an affidavit confirming that notice of the Application for
4 downhole commingling has been provided --

5 A. Yes, it is.

6 Q. -- to all owners in accordance with OCD rules?

7 A. Yes, sir.

8 Q. In your opinion, will approval of the Application
9 for downhole commingling on the subsequent downhole
10 commingling Pictured Cliffs and Fruitland production result
11 in an increased recovery from hydrocarbons from this tract
12 than otherwise could be obtained?

13 A. That's true.

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

17 A. Yes, it would.

18 Q. Were Exhibits 1 through 10 either prepared by you
19 or compiled at your direction?

20 A. Yes, they were.

21 MR. CARR: At this time, Mr. Catanach, we move
22 the admission of Richardson Operating Company Exhibits 1
23 through 10.

24 EXAMINER CATANACH: Exhibits 1 through 10 will be
25 admitted as evidence.

1 MR. CARR: And that concludes my direct
2 examination of Miss Delventhal.

3 EXAMINATION

4 BY EXAMINER CATANACH:

5 Q. Miss Delventhal, the location is unorthodox for
6 both the Pictured Cliffs and the Fruitland Coal?

7 A. That is correct. We're 20 feet east of the legal
8 boundary.

9 Q. For both pools?

10 A. That's correct.

11 Q. And that location, that well location, is exactly
12 1630 feet from the north and 770 from the east?

13 A. That's correct.

14 Q. Okay. This is in an area -- Are there houses in
15 that area?

16 A. Yes, sir.

17 Q. Who have you been dealing with as far as
18 negotiating where the well location would be allowed?

19 A. Richardson Operating Company has their own land
20 staff, and with a combination of them and our firm talking
21 to surface landowners, it's a combination of those two
22 efforts.

23 Q. Okay. Was BLM involved in that?

24 A. No, sir. The surface is almost entirely fee,
25 individual landowners, small quarter-acre sections, even

1 less. Again, it's heavily populated and subdivided.

2 Q. As part of that agreement, Richardson would not
3 be allowed to drill two wells in that quarter section?

4 A. Part of the agreement is the limitation on the
5 surface disturbance, and because of that, it would be
6 impossible for us to put two wellbores on that location.

7 The location for drilling is less than a third of
8 an acre, and we're required immediately after drilling to
9 reclaim a good deal of that. So there will not be much
10 room to work.

11 Also, estimates for the Fruitland Coal, even a --
12 as opposed to directional, even a vertical well, the
13 reserves are estimated at about 600 million cubic feet. So
14 it gets pretty tight economically.

15 Q. The chosen location represents the only location
16 in that northeast quarter that would be permissible?

17 A. It's the only one we could get the surface owners
18 to agree upon.

19 Q. Okay. Is your testimony that it would be
20 uneconomic to drill a horizontal coal well?

21 A. Correct. As you can see on case Number 2, which
22 is the economics for two individual wells, Table C is the
23 Fruitland Coal horizontal economics.

24 The discounted net profit at zero percent is
25 barely positive \$12,000, but at any discount factor you can

1 see that becomes negative. It would not be an investment
2 an operator would make.

3 Q. Is there any consideration given to a dual
4 completion?

5 A. We considered a dual completion and ran cost
6 estimates for such a completion.

7 However, the problem we hit is that the Fruitland
8 Coal is water-productive. As you can see, there's very
9 little separation between the PC and the Fruitland Coal,
10 and in this case the Pictured Cliff also produces
11 significant volumes of water.

12 Should we have to run tubing, a packer, to
13 isolate the two zones, the lower zone in this case, the PC
14 would be hindered significantly, and it would be difficult
15 to try any form of artificial lift from beneath the packer
16 as well.

17 If they were dry gas, it would be a valid
18 completion method.

19 Q. Do you have any idea what the initial producing
20 rates from these zones might be?

21 A. We can estimate based off of offsetting wells.
22 At this point we would estimate the Pictured Cliff would
23 produce around 500 to 600 MCF per day, and the Fruitland
24 Coal around 150 MCF per day.

25 But, once again, we would individually test each

1 horizon in this wellbore to make an exact determination.

2 Based off of the offsets and recoverable
3 reserves, it would probably be in the range of 80 percent
4 allocated to the Pictured Cliff and 20 to the Fruitland
5 Coal, and that may vary a little bit, but it should be
6 pretty close.

7 Q. How long do you propose to test each zone?

8 A. The BLM requires a 24-hour test. Again, once you
9 complete the wells, they have a period of clean-up before
10 the test would be performed. So it would be after the load
11 is recovered.

12 Q. How long might that be?

13 A. Usually, probably in this case, two to three
14 days. They would be foam-stimulated so the amount of load
15 fluid would be minimized, and the return of that fluid
16 should take two to three days.

17 Q. Do you feel like a 24-hour test on the PC gives
18 you an accurate picture of what --

19 A. I think it would be relatively accurate. It may
20 not be the identical figure, but both zones have
21 essentially the same completion method, the same bottomhole
22 pressure; whatever inaccuracy should be common to the
23 24-hour test if they were performed identically between
24 both horizons.

25 And again we're trying to get that percentage,

1 more so than an exact number.

2 Q. Would it be more accurate to conduct a longer
3 period of test on the PC at least?

4 A. I think what you'd find is maybe your IP would be
5 an 80-20 split, and after seven days the rates may be
6 lower, but the percentage split would probably be nearly
7 identical.

8 Q. Is there any problem that you see conducting a
9 longer test period?

10 A. No, sir. And what we would propose is to test
11 against sales at any event. So seven days or one day makes
12 no matter to us.

13 Q. Would that initial production data be the only
14 factor utilized, or would offset PC production somehow --

15 A. For the allocation formula?

16 Q. Right.

17 A. The offset production is taken into account, as
18 also will be log analysis on this well. For the ultimate
19 recovery, it's a combination of decline curve and also gas-
20 in-place calculations.

21 So we have the offsetting decline curve
22 information, we will get net thickness, porosity, those
23 type, figures off of our open-hole logs, and that will
24 determine the ultimate recovery from the Pictured Cliff.

25 Q. Do you propose that you consult with Greg Chavez

1 up in Aztec?

2 A. I would propose that we pull our data together
3 and submit it to the District Office for administrative
4 approval once the data has been obtained.

5 EXAMINER CATANACH: I have nothing further, Mr.
6 Carr.

7 MR. CARR: We have nothing further in this case,
8 Mr. Catanach.

9 EXAMINER CATANACH: There being nothing further,
10 this case will be continued to the October 13th hearing
11 with, I presume, no additional testimony.

12 MR. CARR: We don't anticipate it. At that
13 time -- We would ask at that time that the case be taken
14 under the advisement on the record made here today.

15 EXAMINER CATANACH: Okay. That being the case,
16 this case will be continued to October 13th.

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CERTIFICATE OF REPORTER

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

I, Deborah O'Bine, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that my notes were transcribed under my supervision; and that the foregoing is a true and accurate record of the proceedings.

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

Deborah O'Bine

DEBORAH O'BINE
 CCR No. 63

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11106, heard by me on September 25, 1988.
David R. Grant, Examiner
 Oil Conservation Division