

NEW MEXICO OIL CONSERVATION DIVISION  
STATE LAND OFFICE BUILDING  
STATE OF NEW MEXICO  
CASE NO. 10456

IN THE MATTER OF:

The Application of Blackwood  
& Nichols Company, a limited  
partnership, for an unorthodox  
coal gas well location,  
Rio Arriba County, New Mexico.

BEFORE:

DAVID R. CATANACH  
Hearing Examiner  
State Land Office Building  
April 2, 1992

REPORTED BY:

DEBBIE VESTAL  
Certified Shorthand Reporter  
for the State of New Mexico

**ORIGINAL**

## A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

**ROBERT G. STOVALL, ESQ.**

General Counsel

State Land Office Building

Santa Fe, New Mexico 87504

FOR THE APPLICANT:

CAMPBELL, CARR, BERGE & SHERIDAN, P.A.

Post Office Box 2208

Santa Fe, New Mexico 87504-2208

BY: **WILLIAM F. CARR, ESQ.**

## I N D E X

## Page Number

Appearances

2

## WITNESSES FOR THE APPLICANT:

1. CURTIS McKINNEY

Examination by Mr. Carr

5

Examination by Examiner Catanach

15

Certificate of Reporter

23

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1                   EXAMINER CATANACH: At this time we'll  
2 call Case 10456.

3                   MR. STOVALL: Application of Blackwood  
4 & Nichols Company, a limited partnership, for an  
5 unorthodox coal gas well location, Rio Arriba  
6 County, New Mexico.

7                   EXAMINER CATANACH: Are there  
8 appearances in this case?

9                   MR. CARR: May it please the Examiner,  
10 my name is William F. Carr with the Santa Fe law  
11 firm, Campbell, Carr, Berge & Sheridan. We  
12 represent Blackwood & Nichols Company, a limited  
13 partnership, and I have one witness.

14                   EXAMINER CATANACH: Any other  
15 appearances?

16                   The witness please stand to be sworn  
17 in.

18                   CURTIS McKINNEY

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

21                   EXAMINATION

22 BY MR. CARR:

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

25               A. My name is Curt McKinney.

1 Q. Where do you reside?

2 A. Oklahoma City, Oklahoma.

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

5 A. I'm a petroleum geologist for Blackwood  
6 & Nichols Limited Partnership.

7 Q. Mr. McKinney, have you previously  
8 testified before the New Mexico Oil Conservation  
9 Division?

10 A. Yes.

11 Q. At the time of that prior testimony,  
12 were your credentials as an expert witness in  
13 petroleum geology accepted and made a matter of  
14 record?

15 A. Yes.

16 Q. Are you familiar with the application  
17 filed in this case on behalf of Blackwood &  
18 Nichols?

19 A. I am.

20 Q. Have you made a study of the subject  
21 area?

22 A. Yes, I have.

23 Q. Are you familiar with the proposed  
24 Fruitland Coal well?

25 A. Yes, I am.

1 MR. CARR: Are the witness'  
2 qualifications acceptable?

3 EXAMINER CATANACH: They are.

4 Q. (BY MR. CARR) Would you briefly state  
5 what Blackwood & Nichols seeks with this  
6 application?

7 A. We're seeking the approval of an  
8 unorthodox gas well location in the Northeast  
9 Blanco Unit Well No. 505 at a point 975 feet from  
10 the north line and 1,935 feet from the west line  
11 of Section 21, Township 30 North, Range 7 West in  
12 Rio Arriba County.

13 Q. Are you familiar with the rules which  
14 govern development of this pool?

15 A. Yes.

16 Q. Are there special rules in effect?

17 A. Yes.

18 Q. What are the well location requirements  
19 for wells in this pool?

20 A. It's opposing northeast-southwest  
21 quarter section, two wells for 640 acres. Is  
22 that clear?

23 Q. And the rule provides for wells in the  
24 northeast and southwest quarter?

25 A. Yes.

1 Q. How is the proposed well unorthodox?

2 A. It's in the wrong quarter section. It  
3 would be in -- the location sought is in the  
4 northwest quarter, and it's off-pattern as well.

5 Q. Have you prepared certain exhibits for  
6 presentation here today?

7 A. Yes, I have.

8 Q. Let's go to Exhibit No. 1, and I'd ask  
9 you to identify that for us first and then review  
10 it for Mr. Catanach.

11 A. This is a plat, primarily a production  
12 plat, of the area in and around the proposed  
13 location for the No. 505 well.

14 Q. That's located in the northwest of  
15 Section 21?

16 A. That's correct.

17 Q. Do you have a stand-up unit dedicated  
18 to that?

19 A. That's correct.

20 Q. All right. Go ahead.

21 A. The Northeast Blanco Unit is designated  
22 as being to the northwest of this red line that  
23 cuts through the exhibit. The red well numbers  
24 and well symbols represent the Fruitland Coal  
25 wells.



1           Production data is shown associated  
2 with those Fruitland Coal wells. The initial  
3 production date is shown. The initial potential  
4 rate is shown. Beneath that is the latest date  
5 for which production data is available, in most  
6 cases November of 91, and the cumulative  
7 production as to gas and water.

8           Other wells shown are primarily  
9 Mesaverde wells that aren't really relevant to  
10 this application, but their well spots are shown.

11         Q.       Who operates the acreage to the east of  
12 the unit in this area?

13         A.       In every case it's Meridian Oil,  
14 Incorporated.

15         Q.       Could you refer first to the Blackwood  
16 & Nichols Northeast Blanco Unit Well No. 405 and  
17 review for Mr. Catanach your efforts to develop  
18 this spacing unit?

19         A.       All right. The No. 405 is in the  
20 southwest quarter of Section 21 shown on this  
21 first exhibit. That well -- all work on that  
22 well was done in 1989. It was spudded on August  
23 20th. A protection string of 9-5/8 inch casing  
24 was run to 328 feet on the 21st. We set 7-inch  
25 intermediate at 3,440 feet on the 24th.

1           Following that we drilled through the  
2 Fruitland Coal to a depth of 3,592 feet. On the  
3 26th we attempted an open-hole cavitation  
4 completion on this well which failed. We saw no  
5 sustained flare. We got virtually no coal  
6 returns. Shut-in pressures barely exceeded 5  
7 PSI.

8           Q.       Go ahead.

9           A.       Following that we drilled a well deeper  
10 through the Pictured Cliffs to the Td in the  
11 Lewis Shale at a depth of 3,799 feet. We logged  
12 the well. We ran a 4-1/2 inch liner to total  
13 depth submitted in place on the 28th of August.  
14 The well has been shut-in waiting on orders since  
15 that time.

16          Q.       Is the log of the well on file with the  
17 Oil Conservation Division?

18          A.       Yes, it is.

19          Q.       Let's move to Exhibit No. 2. Would you  
20 identify that, please?

21          A.       This is simply the USGS topographic map  
22 of the area. Again, the red line identifies the  
23 outline of our Northeast Blanco Unit. It's a  
24 little bit difficult to see here. But you can  
25 see the 405 well, again in the southwest in

1 Section 21, and our proposed location for the 505  
2 in the northwest.

3 The purpose of this exhibit is to show  
4 the ruggedness of topography in the area around  
5 the 505 and the relative difference to the north  
6 as you get out into the plain there, more or less  
7 at the 505 proposed location.

8 Q. You operate a well that's indicated as  
9 the 4A well in the northwest?

10 A. Yes.

11 Q. In Section 21?

12 A. Yes.

13 Q. Would it be possible to locate the 505  
14 well in close proximity to that particular well?

15 A. We evaluated doing just that, and  
16 archeological investigation revealed numerous  
17 sites there. And the nearest site to that well  
18 that we could find that would meet with the  
19 regulations regarding archeological sites was  
20 where we have selected the 505 site.

21 Q. So archeological and other  
22 topographical considerations dictate placing the  
23 well in the northwest quarter at the location  
24 you've spotted for the 505?

25 A. Yes.

1           Q.       Let's move to Exhibit No. 3. And what  
2 is this?

3           A.       This is a structure map drawn on the  
4 Huerfanito bentonite bed, which is a hot gamma  
5 ray marker in the Lewis Shale beneath the  
6 Fruitland Coal. The whole section there from the  
7 Lewis on into the Fruitland is conformable and so  
8 it is representative of true structure with  
9 regard to Fruitland Coal.

10                   What this shows primarily is that as we  
11 move to the north of the old 405 well, we will  
12 gain structure some 45 feet, plus or minus, at  
13 the selected 505 location.

14           Q.       Why is structure important in drilling  
15 a successful well on this portion of the  
16 Fruitland Coal?

17           A.       In this particular part of the Basin  
18 Fruitland Coal Field, we see free gas in the  
19 cleat system, which is unusual and not the case  
20 in other parts of the basin. That being so, that  
21 free gas functions as a conventional gas in that  
22 it's trapped in structurally-high places. So  
23 moving up-dip in this particular area will  
24 provide additional reserves.

25           Q.       Let's go now to Blackwood & Nichols

1 Exhibit No. 4. Identify this, please, and review  
2 it for Mr. Catanach.

3 A. This is a net coal isopach where I've  
4 simply examined all the wells in the area and  
5 added up net feet of coal from anywhere from four  
6 to five to six seams on a per-well basis and  
7 merely mapped out the trend there.

8 Here we see we would anticipate at the  
9 505 location between 50 and 60 feet of coal, a  
10 slight increase over what we saw at the 405,  
11 which is noted as 46 feet on this map.

12 Q. Basically this just shows a thicker  
13 section under the proposed location than under  
14 the 405?

15 A. Yes, it does.

16 Q. Would you identify Exhibit No. 5?

17 A. No. 5 is a contour map of average gas  
18 content within the Fruitland Coal trends across  
19 our Northeast Blanco Unit. Gas content data is  
20 generally not released publicly, so my map is  
21 only effective for our unit. I don't have data  
22 similar to that from the offset operator. But  
23 the map certainly does show a trend of increasing  
24 gas content as we move to the north from the 405  
25 to the 505, perhaps a two-times increase.

1           Q.       Mr. McKinney, in your opinion if this  
2 application is approved and the 505 well drilled  
3 as proposed, will Blackwood & Nichols be able to  
4 recover gas that would not otherwise be  
5 recovered?

6           A.       Yes.

7           Q.       Was notice of this hearing provided to  
8 Meridian?

9           A.       Yes, it was.

10          Q.       Is Exhibit No. 6 a copy of an affidavit  
11 with attached letters confirming that notice has  
12 been provided of today's hearing as required by  
13 OCD rules and regulations?

14          A.       Yes, it is.

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

19          A.       Yes.

20                 MR. CARR: At this time, Mr. Catanach,  
21 we move the admission of Blackwood & Nichols  
22 Company exhibits 1 through 6.

23                 EXAMINER CATANACH: Exhibits 1 through  
24 6 will be admitted as evidence.

25                 MR. CARR: That concludes my direct

1 examination of Mr. McKinney.

2 EXAMINATION

3 BY EXAMINER CATANACH:

4 Q. Mr. McKinney, what does Blackwood &  
5 Nichols propose to do with Well No. 405?

6 A. Our intention is to convert that to a  
7 pressure observation well, which is in general  
8 what we've done with any wells that we have  
9 replaced. Rather than simply plug the wells, we  
10 have converted them to pressure observation  
11 wells. There are several on the map, as shown on  
12 the Exhibit 1.

13 Q. It's your opinion that that well will  
14 not be productive in the Basin Fruitland Coal?

15 A. I don't believe it will be.

16 Q. Do you have an opinion as to why that  
17 well was not productive or will not be  
18 productive?

19 A. I have an opinion. There is no clear  
20 explanation. The well did -- the samples from  
21 the well looked very different from samples from  
22 wells to the north. I think that we're going  
23 through a rank change as we move to the south,  
24 which is going to result in lower permeability  
25 and lower gas contents.

1           It's not a perfectly straight line  
2 across the southern end of this unit. You can  
3 move to the east and west or northwest-southeast,  
4 anyway, of this location and find some wells on  
5 our unit and some wells on Meridian's San Juan  
6 Basin 30-6 Unit that are better wells or are  
7 economic wells.

8           It's an irregular boundary. There may  
9 be some other factors that come into play. There  
10 may be some slight faulting that has crushed the  
11 coal here and allowed gas content to be depleted  
12 due to additional layer fracturing. There's a  
13 number of possibilities.

14           We saw a greater increase in calcite  
15 cement in the Fruitland Sands intermingled with  
16 the Fruitland Coals and a greater increase in  
17 calcite cement in the underlying Pictured Cliffs  
18 Sand, which may indicate that fracturing due to  
19 later faulting provided pathways for calcium-rich  
20 waters to flush through here and deposit some  
21 calcite in the cleat system as well in the  
22 sandstones.

23           There's a variety of theories, but I'm  
24 confident in saying that this will not be an  
25 economic Fruitland Coal well. We couldn't get it



1 through anything.

2 Q. The proration unit for the proposed 505  
3 would be the west half?

4 A. Yes.

5 Q. Has Blackwood & Nichols run an  
6 archeological clearance on the 505 proposed site?

7 A. Yes.

8 Q. It is all clear?

9 A. Yes, that site has been approved.

10 Q. Okay. Mr. McKinney, the average gas  
11 content is affected by what factors?

12 A. This particular map -- it's difficult.  
13 This is a difficult parameter to map, but the net  
14 feet of coal certainly has an impact. And then  
15 permeability and the ability of that, of the rank  
16 of the coal, which is strongly related to  
17 permeability, or I should say vice versa,  
18 permeability is strongly related to the rank.

19 Those are the most important factors as  
20 far as the average gas content. The more feet of  
21 coal here I've got and the better the rank,  
22 presumably, the higher the average gas content  
23 will be, and that's the case as shown on this  
24 map.

25 We increase net feet of coal as we move

1 to the north, and then the rank also increases as  
2 we go to the north. That's not demonstrated on  
3 here, but from information that we've gathered  
4 across the unit and indeed across the basin  
5 ranked us increase to the north.

6 Q. You said something about as you move  
7 up-structure in the Basin Coal Pool, you get more  
8 free gas in the coal formation?

9 A. In this area, there's -- yes, that's  
10 correct.

11 Q. So by going up-structure, you have a  
12 lot better chance of producing the free gas in  
13 the coal?

14 A. Oh, yes. That's where it should be.

15 Q. Do you have an opinion as to whether  
16 the 505 and the 407 together will effectively  
17 drain the south half of that section?

18 A. Well, these -- the predominant cleat,  
19 the face cleat orientation in this area is  
20 northeast-southwest. So these wells will drain  
21 not precisely radially, but somewhat elliptical.  
22 And so they will drain probably to a greater  
23 extent to the south than they will, say, just  
24 east-west. But I think they'll drain what gas  
25 there is to be drained.

1           At some point in the future, you know,  
2 when spacing changed or something, there may be a  
3 necessity to put another well to the south,  
4 although given our experience with the 405, it's  
5 my belief that gas content down there, the  
6 quality of the coal down there may be such that  
7 you can't make an economic well down there. And  
8 that may not be an economically-recoverable  
9 reserve in the the south half of Section 21.  
10 That's our experience based on the 405.

11           Other wells that we've drilled out here  
12 that are also poor performers in the vicinity of  
13 the 405 or the 477, which is shown in the north  
14 half of Section 29 and the 479, which is in the  
15 south half of Section 20, those three wells  
16 together were anomalously poor wells on this  
17 unit. Pretty much every other well you see on  
18 the plat was an economic well, so there's just  
19 this little pod out here.

20           As I say, it's a northwest-southeast  
21 trend through here where you're going to reduce  
22 your rank and produce your permeability, but it's  
23 an irregular line. And, unfortunately for us, I  
24 think the line shifted north right through there,  
25 and it shifted back to the south somewhat.

1           It's not a precise line. There's a  
2           transitional area between, in my opinion, these  
3           strong wells where you have strong over-pressure  
4           Fruitland coal some and high gas contents, high  
5           potential reserves, and then the south where you  
6           have poorer wells.

7           Q.       Has Meridian voiced any kind of opinion  
8           on your proposal that you know of?

9           A.       No. I believe that they've approved  
10          our proposal, as far as the costs are concerned,  
11          but I haven't talked to them in any detail about  
12          this sort of thing.

13          Q.       They're an interest owner in the unit?

14          A.       Oh, yes. They will benefit from this  
15          well.

16          Q.       Most of the sections that are offset  
17          are already developed, pretty much developed, in  
18          the coal?

19          A.       Yes, that's correct.

20          Q.       Therefore, you're not going throw  
21          anything off-pattern in the adjacent sections by  
22          drilling this well?

23          A.       No.

24          Q.       As I understand it, the 505 is not only  
25          in the wrong quarter section, but it is an

1 unorthodox location for the pool --

2 A. Yes, it is.

3 Q. -- due to the setback requirements.

4 And that is due to the presence of topographic --  
5 I mean archeological sites?

6 A. Yes.

7 Q. You have investigated standard  
8 locations in the northwest quarter?

9 A. Yes, we have. I think that it fits the  
10 setbacks.

11 MR. CARR: Mr. Catanach, I think it  
12 fits the setbacks also. The well is located 975  
13 feet from the north line. And my understanding  
14 is there is a 790-foot setback, so I don't think  
15 it's in violation there. I think it's unorthodox  
16 only because it is located in the wrong quarter  
17 section.

18 EXAMINER CATANACH: Okay. I believe  
19 that's all I have, unless Bob has something  
20 else.

21 MR. STOVALL: Gee, you asked all the  
22 technical questions I knew anything about. You  
23 took it away from me, Dave. I guess I won't ask  
24 any.

25 EXAMINER CATANACH: I guess that's it

1 then.

2 MR. CARR: We have nothing further in  
3 this case.

4 EXAMINER CATANACH: There being nothing  
5 further, Case 10456 will be taken under  
6 advisement.

7 [And the proceedings were concluded.]

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I do hereby certify that the foregoing is  
a complete record of the proceedings at  
the Examiner hearing of Case No. 10456,  
heard by me on April 2 1992.  
David R. Catanach, Examiner  
Oil Conservation Division

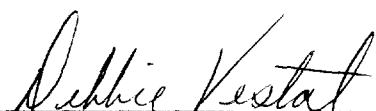
## 1 CERTIFICATE OF REPORTER

2  
3 STATE OF NEW MEXICO )  
4 ) ss.  
COUNTY OF SANTA FE )

5  
6 I, Debbie Vestal, Certified Shorthand  
7 Reporter and Notary Public, HEREBY CERTIFY that  
8 the foregoing transcript of proceedings before  
9 the Oil Conservation Division was reported by me;  
10 that I caused my notes to be transcribed under my  
11 personal supervision; and that the foregoing is a  
12 true and accurate record of the proceedings.

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

18 WITNESS MY HAND AND SEAL April 10,  
19 1992.

20  
21  
22   
23 \_\_\_\_\_  
24 DEBBIE VESTAL, RPR  
NEW MEXICO CSR NO. 3  
25