

1 STATE OF NEW MEXICO
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BUILDING
5 SANTA FE, NEW MEXICO

6 17 August 1988

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Nearburg Producing CASE
10 Company for a non-standard gas pro- 9466
11 ration unit and an unorthodox gas
12 well location, Eddy County, New
13 Mexico.

14 BEFORE: David R. Catanach, Examiner

15
16 TRANSCRIPT OF HEARING

17
18 A P P E A R A N C E S

19 For the Division: Robert G. Stovall
20 Attorney at Law
21 Legal Counsel to the Division
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23 For the Applicant: Scott Hall
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1 MR. CATANACH: Call next Case
2 Number 9466. Application of Nearburg Producing Company for
3 a nonstandard gas proration unit and an unorthodox gas well
4 location, Eddy County, New Mexico.

5 Are there appearances in this
6 case?

7 MR. HALL: Mr. Examiner, Scott
8 Hall from the Campbell & Black law firm, and I do have
9 witnesses this morning.

10 MR. CATANACH: Any other ap-
11 pearances this morning?

12 Will the witnesses please
13 stand and be sworn in?

14
15 (Witnesses sworn.)

16
17 MARK NEARBURG,
18 being called as witness and being duly sworn upon his oath,
19 testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. HALL:

23 Q For the record please state your name
24 and by whom you are employed and in what capacity?

25 A Mark Nearburg. Nearburg Producing Com-

1 pany, Land Manager.

2 Q And, Mr. Nearburg, have you previously
3 testified before the Division, one of its examiners, and
4 had your credentials accepted of record?

5 A Yes.

6 MR. HALL: Are the witness'
7 qualifications acceptable today?

8 MR. CATANACH: They are.

9 Q Mr. Nearburg, what is it that you seek
10 by your application here today?

11 A We seek a nonstandard gas proration unit
12 and unorthodox gas well location in Eddy County, New Mexico
13 for a Morrow test well located 990 feet from the north and
14 east lines of Section 12, Township 19 South, Range 25 East.

15 We propose to dedicate either the north
16 half 320-acre unit or a northeast quarter 160-acre unit for
17 the drilling of this well.

18 Q All right. Have you prepared certain
19 exhibits in connection with your testimony today?

20 A Yes, I have.

21 Q Let's look at Exhibit Three, if you
22 would explain that to the Examiner.

23 A Exhibit Three is a land map showing pro-
24 ducing proration units in the dotted lines; those are Mor-
25 row producing units; the proposed well with a red dot; and

1 a 160-acre proration unit outlined in yellow. The map also
2 shows in green the wells that are producing on the Anadarko
3 Damson, and Nearburg offset units, which are all Morrow
4 wells.

5 The dry hole in the southeast quarter
6 southwest quarter of Section 1, 19 South, 25 East, is a
7 Morrow dry hole that never produced.

8 The well in blue in the southeast quar-
9 ter northwest quarter of Section 12 was drilled to the Mor-
10 row; it was never completed in the Morrow; it was plugged
11 back to the Atoka, where it produced until abandonment and
12 that well is currently plugged and abandoned.

13 The well in orange is a well that was
14 drilled to the Morrow. It's located in the northeast quar-
15 ter northeast quarter of Section 11, 19 South, 25 East. It
16 was drilled to the Morrow, was never completed in the Mor-
17 row. They plugged back and completed in the Strawn forma-
18 tion and that well is currently producing from the Strawn
19 formation.

20 Q All right. Would you please elaborate?
21 What is the purpose of seeking the alternative 160-acre
22 nonstandard unit?

23 A Due to the numerous holes that have
24 penetrated the Morrow formation in this area, we had signi-
25 ficantly more data than we usually do for a Morrow location

1 and in preparing for the hearing it became clear that the
2 Morrow potential in the northwest quarter has been condem-
3 ned; that if the proration unit is a 160-acre unit, the
4 well is at a standard location, and as the geology will
5 show, we wanted to give the Commission the option to select
6 a proration unit they feel is most applicable.

7 Q All right. And again what are the ac-
8 reage dedication and the well location requirements for
9 this particular pool?

10 A This is the Boyd Morrow Pool. It speci-
11 fies 320-acre proration units with wells location 1980 feet
12 from the end boundary and 660 feet from the side boundary.

13 For a 160-acre spacing the statewide
14 rules call for wells located no closer than 660 feet to the
15 outer boundary nor closer than 330 feet to the inner bound-
16 ary of a quarter quarter section, and 1320 feet between
17 wells.

18 The closest well to our proposed well in
19 this hearing is the Glass 7-E No. 1, which is located in
20 the southwest quarter northwest quarter of Section 7, and
21 it is approximately 1800 feet from the proposed well.

22 Q But for the 160-acre unit your location
23 would be standard, is that correct?

24 A That's correct.

25 Q Does Nearburg Producing have any other

1 development in the area?

2 A Not at this time, other than the Glass
3 7-E.

4 Q All right.

5 A And I would also like to point out that
6 the east half northeast quarter of Section 12 is on common
7 mineral working interest ownership with the north half of
8 Section 7.

9 Q All right. Getting back to the 320
10 unit, if the application for that well is granted, do you
11 believe that a production penalty is appropriate?

12 A In this case we do not because of the
13 production from -- legally correlative rights are being
14 protected by the production on Anadarko, Damson and the
15 Nearburg offsets.

16 Q All right.

17 Q What does your economic data show is
18 necessary to have a successful well in this area?

19 A We believe that a cumulative production
20 of at least 1 BCF will pay out the well and provide some
21 return.

22 Q All right. Let's -- do you have any-
23 thing further to add?

24 A I would point out that on Exhibit Three,
25 in the northeast quarter Nearburg has 100 percent working

1 interest. Do you have reference to Exhibit Four or do you
2 want to reference that?

3 Q Yes, please go ahead and explain it.

4 A On the 320-acre unit Nearburg would have
5 84 percent working interest and Yates would have 16 percent
6 working interest. The Yates interest is by virtue of a
7 well located in another section other than Section 12,
8 which held by production certain leases in the west half
9 northwest quarter of Section 12.

10 Q All right. Let's look at Exhibit Five,
11 if you would, please.

12 Is Exhibit Five an affidavit showing
13 that you've directed your counsel to notify all offset
14 interest owners and ownership interest affected by the ap-
15 plication?

16 A Yes, it is, and we took care in our
17 notice that if the Commission decides 160-acre spacing is
18 appropriate, we did notify the owners in the northwest
19 quarter of Section 12 of the option given to the Commission
20 to approve the 160-acre spacing. So not only did we notice
21 the people offsetting in the direction of our nonstandard
22 location, we also notified people within Section 12 in the
23 northwest quarter.

24 Q All right. Mr. Nearburg, in your opin-
25 ion would the granting of your applications be in the in-

1 terest of conservation, the prevention of waste, and pro-
2 tection of correlative rights?

3 A Yes.

4 Q And were Exhibits Three, Four and Five
5 prepared by you or at your direction?

6 A Yes.

7 MR. HALL: At this time we'd
8 move admission of Three, Four and Five.

9 Q Do you have anything further you wish to
10 add?

11 A No.

12 MR. HALL: That concludes our
13 direct of this witness.

14 MR. CATANACH: Exhibits Three,
15 Four and Five will be admitted into evidence.

16
17 CROSS EXAMINATION

18 BY MR. CATANACH:

19 Q Mr. Nearburg, if we could go over the
20 ownership of the offset acreage, in Section 1 is that all
21 Anadarko?

22 A The west half of Section 1, there is a
23 well in the southwest quarter northwest quarter which is
24 operated by Amoco and I'm not certain is it a Morrow well?
25 It's an extremely marginal well.

1 Q Which one?

2 A That's a Morrow well operated by Amoco.

3 MR. MAZZULLO: That's a good

4 one.

5 A Our geologist says that's a good well

6 operated by Amoco, a good Morrow well in the southwest

7 northwest of 1.

8 Q So they've got the east -- or the west

9 half dedicated to that well?

10 A Yes.

11 Q Okay, over in Section --

12 A Okay, Section 6?

13 Q 6.

14 A The north half is very broken up and

15 does not necessarily apply to this case. There is no pro-

16 duction there now.

17 Q Okay.

18 A The Damson Well in the south half of

19 Section 6 is a Morrow producer. Do you have any other

20 questions about that well?

21 Q No, I don't.

22 A And then in the north half of 7 the well

23 is the Glass 7-E, which was just recently drilled, and

24 which gave us a definition to pick the location we're ap-

25 plying for.

1 Q Okay, down south in 12 and 7, what's the
2 ownership status of that?

3 A The south half of 12 is owned by Near-
4 burg and Yates. It's Fairchild Farms tracts. There are
5 several hundred leases in there. The ownership is about 60
6 percent Nearburg and 40 percent Yates. That's a very rough
7 guess. I'd prefer to send you a letter stating the owner-
8 ship, if you want.

9 Q All right.

10 A (Not understood). The south half of
11 Section 7, the west half southwest quarter is owned by
12 Yates Petroleum. It's held by production from a well not
13 in Section -- not anywhere on this map.

14 The southwest quarter southeast quarter
15 is leased to Yates Petroleum Company and all of the lands
16 in the south half of Section 7 are leased to Nearburg.

17 Q Okay. You made a statement to the
18 effect that the northwest quarter of Section 4 was condem-
19 ned. Is that condemned from geology?

20 A Yes. I think that will be shown in our
21 geologic presentation.

22 MR. CATANACH: That's all I
23 have for the witness. He may be excused.

24
25

1 LOUIS J. MAZZULLO,
2 being called as a witness and being duly sworn upon his
3 oath, testified as follows, to-wit:

4
5 DIRECT EXAMINATION

6 BY MR. HALL:

7 Q For the record please state your name,
8 by whom you're employed and in what capacity.

9 A My name is Louis Mazzullo. I'm a geolo-
10 gical consultant on retainer to Nearburg Producing Company
11 in Midland.

12 Q All right. Mr. Mazzullo, are you fami-
13 liar with the application here today and the subject lands?

14 A I am.

15 Q Have you previously testified before
16 the Division or one of its examiners and had your
17 credentials accepted of record?

18 A I have.

19 MR. CARR: Mr. Examiner, are
20 the witness' credentials accepted?

21 Q Mr. Mazzullo, have you prepared certain
22 exhibits in conjunction with your testimony today?

23 A Yes. I have two, marked Exhibits One
24 and Two.

25 Q Please refer to Exhibit One. Would you

1 please explain what that's intended to reflect?

2 A Okay. Exhibit One, on the right side of
3 Exhibit One is a net sand isopach or thickness map of the
4 Morrow interval which contains the sandstone reservoirs
5 that we're looking for.

6 On the lefthand side is a diagram -- is
7 a type log taken from the newly completed Nearburg No. 7-E
8 Glass, adjacent to the proposed location, showing how I
9 arrived at the criteria that used in making the isopach map
10 on the right side.

11 Looking at the type log, I utilized a
12 gamma ray API unit cutoff of 50 units as clean sand. What
13 I qualify clean sand is anything under 50 units API, and
14 these are indicated in yellow on the gamma ray track.

15 ON the CNL/FDC density track I've indi-
16 cated a density cutoff, sandstone cutoff, of 80 percent
17 porosity as productive, being a productive Morrow porosity
18 cutoff in this particular area. (Not clearly understood)
19 sands that -- that have greater than or equal to 8 percent
20 density porosity indicated by red on the density track.

21 The isopach map on the righthand side is
22 an isopach of total net sandstone in the interval between
23 the top of the Morrow, the Middle Morrow indicated on the
24 type log, and the top of the Barnett Shale. It's a total of
25 all the yellow sands on the gamma ray track. The dotted

1 patterns on the isopach map correspond to those areas were
2 there's greater than 10 percent of 8 percent porosity -- 10
3 feet of 8 percent porosity in that entire interval. That's
4 greater than 10 percent -- 10 feet of net 8 percent poro-
5 sity. porosity.

6 These criteria were applied after
7 looking at the entire area, several township area, deciding
8 on what constituted a productive well, something that would
9 make at least a BCF of gas from the Morrow, and the loca-
10 tions that we then proposed are based upon where we think
11 the best porosity development is going to be in a particu-
12 lar area. So, for instance, 40 feet of -- having 40 feet
13 of sand doesn't guarantee you're going to have reservoir
14 conditions if you don't have greater than or equal to 10
15 percent -- 10 feet of porosity.

16 So anywhere you see a stippled pattern
17 in an area -- is a fairway, a potentially productive fair-
18 way, in terms of what we know the Morrow -- how the Morrow
19 is productive in this area.

20 The arrows, the bold arrows on the iso-
21 pach map indicate primary sediment flow directions through-
22 out the middle to lower Morrow interval that I've isopach-
23 ed. So you can see that the Morrow here is comprised of a
24 series of different sands which have different flow direc-
25 tions, different flow directions at the point of whatever

1 particular proposed location we come up with.

2 So, for example, at the proposed loca-
3 tion in Section 12, as indicated by the red dot and the red
4 arrow, we see several sands, or I anticipate there being
5 several sands there, one of which shows a sweep meander, a
6 very sharp meander. Another one, which is coming in from
7 the northwest; and perhaps another one that's almost flow-
8 ing due southeast. So there are at least three major sand
9 bodies that I might anticipate at that particular location,
10 which cumulatively produce greater than 10 feet of what I
11 hope to be productive porosity.

12 If we move off to the west towards the
13 well that has the value of 22 feet of net sand, that is the
14 well that was completed in the Atoka. It did not make a
15 Morrow well even though it had 22 feet of sand in it. It
16 condemns virtually the entire west half of Section 12 as we
17 now see it.

18 If we were to move the proposed location
19 any further to the west we run the risk of running of the
20 productive fairway and closer to that dry Morrow well.

21 Q All right, let's refer to Exhibit Two.
22 What is this exhibit intended to show?

23 A I might add in terms of Exhibit Number
24 One, the flow directions that we -- that I'm indicated by
25 the bold arrows were determined by dipmeter interpretation

1 off of the No. 7-1 Glass that Nearburg completed.

2 Okay, the exhibit marked Exhibit Number
3 Two is a structural cross section which was indexed on the
4 preceding isopach map. It's marked west-east on the iso-
5 pack map and it goes from west on the left side of the
6 cross section to east on the right side of the cross sec-
7 tion.

8 It's a structure map that goes through
9 the proposed location, proceeds down dip to the east to the
10 Nearburg No. 1 -- 7-E No. 1 Glass, and it also takes in the
11 two wells in Section 1, the closest one to the proposed
12 location, which is the poorer producer from the Morrow,
13 it's only cumed 131,250 MCF of gas, and further up dip to
14 the Amoco No. 1 Alley, which has cumed nearly 2 BCF of gas;
15 at this point it's probably closer to 2-1/2 BCF of gas from
16 that well.

17 As you can see on the cross section, we
18 are going to -- we are anticipating being up dip to
19 production in the No. 1 Glass 7-E, and we're going to be
20 down dip to production in the No. 1 Anderson and the No. 1
21 Alley; however, these sandstone bodies are laterally dis-
22 continuous. You cannot correlate the pay zones in the
23 Alley or the Anderson wells to what is productive now in
24 the No. 1 7-E Glass, nor do I anticipate us intersecting
25 the same productive sands in the proposed locations as are

1 producing out of the two up dip wells.

2 So what I'm saying here is that I anti-
3 cipate that we will intersect perhaps one zone in common to
4 7-E Glass and two, maybe more, zones that are probably not
5 going to be in common to the up dip producers, which are at
6 least a half a mile away from us.

7 Q Anything further to add with respect to
8 Exhibit Two?

9 A No, I don't.

10 Q Mr. Mazzullo, in your opinion will the
11 granting of the applications be in the interest of conser-
12 vation, the prevention of waste, and protection of correla-
13 tive rights?

14 A Yes, it will.

15 Q Were Exhibits One and Two prepared by
16 you or at your direction?

17 A Yes, they were.

18 MR. HALL: We'd move the ad-
19 mission of Exhibits One and Two, and that concludes our
20 direct.

21 MR. CATANACH: Exhibits One
22 and Two will be admitted into evidence.

23

24

CROSS EXAMINATION

25

BY MR. CATANACH:

1 Q Mr. Mazzullo, the well in Section 12
2 that's been plugged --

3 A Uh-huh.

4 Q -- that was tested in the Morrow?

5 A I believe it was tested. I'd have to
6 check and get -- I believe it was tested tight in the Mor-
7 row.

8 Q Was that well logged?

9 A Yes.

10 Q Have you looked at that log?

11 A Oh, yes, and I've done the same deter-
12 mination in terms of net sand and net porosity on that well
13 as I've done with every other well in this area, and to the
14 best of my recollection, it had less than 3 feet of what I
15 would consider to be productive porosity; that is less than
16 3 feet of 8 percent porosity.

17 It doesn't even come any -- it doesn't
18 even come close to the fairway as I've outlined it.

19 Q And at your proposed location you have
20 approximately how many feet of 8 percent (unclear)?

21 A I would anticipate -- now, No. 7-E Glass
22 had approximately 28 feet or so of productive porosity. I
23 would say that we would be at least -- I anticipate being
24 at least that, that good, if not a little bit more, because
25 we have -- I anticipate there being a little bit more sand

1 in the proposed location, total sand.

2 Q Do you have an opinion as to whether the
3 proposed well will drain any portion of the northwest
4 quarter?

5 A I would defer that to our engineer, who
6 can testify on that point, if need be.

7 Q I'd like an opinion, if I could get one.

8 MR. CATANACH: That's all I --
9 the questions I have for now.

10

11 TIMOTHY R. MacDONALD

12 being called as a witness and being duly sworn upon his
13 oath, testified as follows, to-wit:

14

15 DIRECT EXAMINATION

16 BY MR. HALL:

17 Q For the record please state your name,
18 by whom you're employed and in what capacity.

19 A I'm Timothy R. MacDonald. I'm employed
20 by Nearburg Producing as an Engineering Manager in Dallas,
21 Texas.

22 Q And, Mr. MacDonald, have you previously
23 testified before the Division or one of its examiners and
24 have your qualifications been accepted?

25 A Yes.

1 Q Are you familiar with the subject appli-
2 cation in the well?

3 A Yes, I am.

4 MR. HALL: Mr. Examiner, are
5 the witness' qualifications acceptable today?

6 MR. CATANACH: They are.

7 Q Mr. MacDonald, the question has been
8 raised about drainage to the northwest in Section 12. Let
9 me ask you to refer to what's been marked as Exhibit Six.
10 Will that help to explain the situation with respect to
11 drainage?

12 A Yes, I think it will.

13 Q All right, go ahead and explain it, if
14 you would, please.

15 A Exhibit Six shows basically a drainage
16 radius calculation based on reserves of 2-1/2 BCF, which we
17 feel like would be a good well in that area, especially the
18 Amoco Alley Well, and based on the log characteristics
19 shown or calculated from the No. 1 Glass.

20 And that drainage rate is up to 1322
21 feet, which is the area shown in red on the exhibit.

22 Q How did you calculate that drainage
23 radius?

24 A Using standard engineering drainage
25 equations using the 2-1/2 BCF reserves with the 80 percent

1 recovery factor with log calculations of porosity and water
2 saturation, and initial bottom hole pressures, and using a
3 41 foot net pay in the No. 1 Glass.

4 Q All right. In your opinion are the cor-
5 relative rights of interest owners adequately protected by
6 the well at the proposed unorthodox location?

7 A Yes.

8 Q All right. Was Exhibit Six prepared by
9 you or at your direction?

10 A Yes.

11 MR. HALL: We move the admis-
12 sion of Exhibit Six.

13 MR. CATANACH: Exhibit Six
14 will be admitted into evidence.

15 Q Do you have anything further you wish to
16 add?

17 A No.

18 MR. HALL: That concludes our
19 direct of this witness.

20

21

CROSS EXAMINATION

22 BY MR. CATANACH:

23 Q Mr. MacDonald, the radius, as you said,
24 was 1320 feet?

25 A Right.

1 any drainage from the northwest quarter.

2 A Of Section 12? Probably not; very lit-
3 tle. There will probably be some but very little. You
4 know, these drainage calculations, as you know, are basi-
5 cally a simplified drainage radius circle and the reservoir
6 not being completely homogeneous and everything else will
7 influence the exact pattern that will be drained but -- but
8 with the data available this is the best kind of calcula-
9 tions I can do.

10 Q Does that, does the Glass No. 7 Well,
11 does that have a standard proration unit, do you know?

12 MR. NEARBURG: 300 north. That
13 whole north half is common ownership.

14 MR. CATANACH: That's all the
15 questions I have of this witness.

16 He may be excused.

17 MR. HALL: Nothing further in
18 the case.

19 MR. CATANACH: I have a couple
20 for Mr. Nearburg.

21

22

MARK NEARBURG,

23 being recalled as a witness and remaining under oath, tes-
24 tified as follows, to-wit:

25

1 really qualified to say that. We just felt that from the
2 standpoint of administration, and it was just not appro-
3 priate to ask that the pool rules, you know, be adjusted,
4 because I think to do that you'd have to take a look at
5 every well in the pool and we just didn't think it was
6 appropriate.

7 The difference here is all the control
8 you have, you know, to be able to pinpoint like this.

9 As I say, it's hard to say in the
10 absence of control, you know, where the reservoir is. I
11 think we'd rather leave that to the Commission.

12 Q And you stated that you didn't think
13 that the well should be given a penalty.

14 A Right.

15 Q If you should go with a 160-acre prora-
16 tion unit, won't that -- doesn't that justify a penalty?

17 A I think that justifies no penalty be-
18 cause it's at a standard location on a 160-acre unit, and
19 furthermore, you are protecting the correlative rights from
20 the Glass and the Anadarko Well and the ownership between
21 half of the proration unit in 12 and under the Glass 7-1 is
22 common.

23 So especially on a 160-acre unit we do
24 not feel a penalty is appropriate.

25 We feel the penalty would be more appro-

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C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 9466, heard by me on August 17 1988.
David R. Calum, Examiner
Oil Conservation Division