

**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. 12622

**APPLICATION OF NEARBURG EXPLORATION
COMPANY, L.L.C. FOR TWO NON-STANDARD
GAS SPACING AND PRORATION UNITS
LEA COUNTY, NEW MEXICO.**

**REDROCK OPERATING LTD, CO'S
PROPOSED
ORDER OF THE DIVISION**

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on June 28, 2001, at Santa Fe, New Mexico before Examiner Michael E. Stogner.

NOW, on this ____ day of _____, 2001, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

INTRODUCTION

Applicant:

(2) The E/2 of Section 34, T21S, R34E is a 320-acre spacing and proration unit ("GPU") currently dedicated to EOR Resources Inc.'s Llano "34" State Well No. 1 located 1650 feet from the South line and 660 feet from the East line of this section.

(3) The applicant, Nearburg Exploration Company, L.L.C. ("Nearburg") seeks approval by the Division to subdivide this 320-acre GPU to create two non-standard 160-acre gas proration and spacing units as follows:

(a) for Nearburg's Grama Ridge "34" State Well No. 1 ("Nearburg Well") located 1548 feet from the North line and 990 feet from the East line (Unit H) of Section 34 a unit consisting of the NE/4 of Section 34, T21S R34E for production from the Grama Ridge Morrow Gas Pool; and

(b) for EOG Resources, Inc.'s Llano "34" State Com Well No. 1 ("EOG Well") located 1650 feet from the South line and 660 feet from the East line (Unit I) of Section 34 a unit consisting of the SE/4 of Section 34, T21S R34E for production from the Grama Ridge Morrow Gas Pool.

Opposition:

(4) Redrock Operating Ltd, Co ("Redrock") is a 10% overriding royalty owner ("ORR") in the S/2 of Section 34 and would own a 5% ORR in the Nearburg well if the E/2 of Section 34 is dedicated to the Nearburg well. If Nearburg's application is granted then Redrock would be excluded from an ORR in the Nearburg well.

BACKGROUND

The evidence demonstrated that:

(5) Order R-3006 dated December 3, 1965 created the Grama Ridge Morrow Gas Pool and adopted 640-acre spacing. By Order R-3080 dated July 1, 1966 extended pool to cover all of Section 34.

(6) The Grama Ridge Morrow Gas Pool consists of the gross Morrow interval which includes many separate sand stringers which vary greatly in areal extent and in porosity and thickness, both within and among individual stringers.

(7) The vertical limits of the pool currently include all of the Morrow formations and have been administered by the Division as a single common source of supply ("reservoir") since 1965.

(8) Order R-4491 dated March 16, 1973, authorized the injection of gas for storage into specific intervals in the Grama Ridge Morrow Gas Pool in two wells, one being the Grama Ridge Morrow Unit Well No. 2 in Unit L of Section 34.

(9) Order R-5995 dated May 2, 1979, OCD found that the Grama Ridge Morrow Gas Pool is within an upthrust fault block bounded to the west by a NE-SW trending fault and on the east by a North-South trending fault. Found that 320-acres spacing was more appropriate for draining the pool.

(10) On May 2, 1979, the OCD also approved an amended acreage dedication plat which dedicated the W/2 of Section 34 to the Grama Ridge Unit #2 well

(11) Order R-6050 dated July 17, 1979, OCD created the East Grama Ridge Morrow Gas Pool on statewide 320-acre spacing.

(12) On October 10, 1979 the "EOG Well" (originally drilled by Minerals, Inc. and now operated by EOG) located in Unit I (NE/4SE/) was completed in the East Grama Ridge Morrow Gas Pool and a 320-acre gas proration and spacing unit consisting of the E/2 of Section 34 dedicate to the well. This dedication is still in effect today. For some 20 years, production from this well in the SE/4 was shared with the owners in the NE/4

(13) On June 9, 2000, Nearburg completed its Grama Ridge East 34 State Well No. 1 in Unit H of Section 34. But instead of dedicating it to the existing gas proration and spacing unit (GPU") consisting of the E/2 of Section 34 and sharing that production as historically ordered, Nearburg is attempting to dedicate only their NE/4 to the well.

NEARBURG'S CONTENTIONS

(14) Nearburg argued that the Division's definition of "correlative rights" set forth in 19 NMAC 15.1.7(10) obligated the Division to exclude the owners in SE/4 of Section 34 from sharing in the production from the Nearburg well because: (i) there are only two Morrow sand stringers containing recoverable gas present in the Nearburg well; (ii) of those two, the GRE sand stringer has been perforated and produces gas; and (iii) that the GRE sand stringer is present in the EOG Well but has too low a porosity to be productive.

(15) Nearburg's geologist presented his geologic interpretation to argue that the SE/4 should be excluded because he calculates a low porosity in the GRE sand stringer from the open hole neutron-density log for the EOG well thus, he contends, the SE/4 does not contain recoverable reserves from this Morrow GRE stringer which is productive in the Nearburg well. He further argues that the Lower Morrow "A" sand stringer is only present in the Nearburg well and would also exclude the SE/4 owners from sharing in this potential production. To do otherwise, Nearburg contends, would dilute its interest in the recoverable reserves and impair its correlative rights.

(16) Nearburg's petroleum engineer then attempted to determine the volume of recoverable gas under the NE/4 in relation to the SE/4 of Section 34 by a formula which considers effective feet of pay and pore volume. **See Transcript page 108 lines 2-3**

REDROCK'S CONTENTIONS

(17) In opposition, Redrock contends that Nearburg's geologic and petroleum engineering evidence demonstrates that:

(a) the GRE sand stringer being produced in the Nearburg well also is present in the EOG well;

(b) Nearburg's geologic interpretation of the GRE sand stringer and its argument for two non-standard 160-acre gas units, hinges primarily on the data captured by the neutron-density log of the EOG well.

(c) Nearburg's geologic interpretation is subjective, speculative and inadequate to form a reasonable basis for granting Nearburg's application because Nearburg's contention that the SE/4 of this section does not contain recoverable reserves from the GRE sand stringer relies solely on his interpretation of porosity from an open hole neutron-density porosity log taken in the EOG well.

(d) Since all neutron-density logs, including the EOG well log, only investigate a limited radial porosity extent from any wellbore, there is no substantial evidence to definitively determine that the GRE net pay sand does not extend into the SE/4;

(e) since geological interpretations are not an exact science, there is insufficient evidence to support Nearburg's contentions about the size, shape and orientation of the various Morrow sand stringers;

(f) Nearburg's geologic presentation is not definitive enough to show that the SE/4 of Section 34 does not contribute recoverable hydrocarbons in the GRE sand stringer;

(g) Nearburg's geologist testified that he was not aware of any other application which attempted to vertically separate individual strings of the defined Morrow interval as Nearburg was seeking to do.

(h) Nearburg failed to provide substantial evidence as to the amount of original gas in place in the GRE sand and its two experts could not agree:

(i) based upon Nearburg's geologist isopach of the GRE sand that volume was 2.7 BCF of gas.

See Transcript page 108 lines 2-3

(ii) based upon Nearburg's petroleum engineer's estimates that volume ranged from 1.1 BCFG to 1.9 BCFG. **See Transcript page 103 lines 4-5; page 105 lines 1-2; page 107 lines 7-6 and 15-**

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(i) the EOG well located in Unit I of Section 34 was dedicated to the E/2 of Section 34 and produced some 4.1 BCF of gas, most of which was from certain sands stringers located within the defined Lower Morrow "B" interval just above the sand designated by Nearburg as the "GRE" sand stringer, which is present in the EOG Well and also included within the defined Lower Morrow "B" interval;

(j) Nearburg ignored the fact that production from the EOG well was shared with the owners in the NE/4 of Section 34 despite the fact that Nearburg's geologist concluded that the EOG Morrow sand stringer in the Nearburg well calculated to be too wet to produce and in his opinion the NE/4 did not contribute any reserves to the EOG well.

(k) Nearburg's geologist ignored the fact that the GRE sand currently being produced in the Nearburg well is present in the EOG well and is structurally higher in the EOG well than in the Nearburg well.

(l) Nearburg ignored the fact that Division Order R-6050 concluded that the NE/4 and SE/4 of Section 34 should share in production from the Morrow formation.

(m) Nearburg's geologist did not isopach the Morrow sand stringer produced in the EOG well nor any other sand stringer in the Morrow formation except for the two Nearburg sand stringers.

(n) Nearburg's geologist and petroleum engineer were in disagreement about that total volume of gas and the total size of the GRE sand "reservoir". Nor could Nearburg's petroleum engineer confirm the shape and orientation of the GRE sand stringer as interpreted by its geologist. **See Transcript page 110 lines 16-25**

(o) In addition, Nearburg's geologist could not testify as to the exact shape or orientation of either of Nearburg's Morrow stringer.

(p) by maintaining the historical 320-acre spacing unit consisting of the E/2 of this section, waste will be prevented and correlative rights well be protected and the Division will maintain consistency in the treatment of the GPU within the Division's regulations and historical practices.

NEARBURG'S PERMITTING OF ITS WELL

(18) Nearburg contended that it mistakenly believed that the N/2 of Section 34 was available for dedication to its well and relied upon the fact that on February 8, 2000, the Division's Hobbs office had approved the Nearburg application for permit to drill.

(19) Nearburg's senior landman testified that prior to drilling the Nearburg well,

(i) he did not know that Nearburg's proposed N/2 spacing unit would include portions of two separate pools in violation of Division's rules;

(ii) he made no effort to determine the pool rules applicable for the Morrow in Section 34 nor did he make any effort to search the Division's well files or records to determine the availability of the N/2 of Section 34 for a standard 320-acre gas spacing unit;

(iii) Nearburg failed check to see if any portion of Section 34 was dedicated to the gas storage unit before drilling its well;

(iv) Nearburg has not, and sees no need to improve their spacing unit research process regarding this situation to prevent similar problems in the future.

(v) instead, he simply relied upon the new State of New Mexico oil & gas lease, a N/2 Section 34 drill site title opinion which was ordered by Nearburg to conform with their "presumed" unit, and the Division's approval of the Nearburg Application for Permit to Drill ("APD")

(20) Nearburg spudded the well on March 7, 2000 and received an approved allowable on June 22, 2000.

(21) In July, 2000, the Division Hobbs office notified Nearburg by telephone that the N/2 spacing unit could not be allowed and that Nearburg would have to change the acreage dedication.

(22) On January 8, 2001, some six months after being notified, Nearburg finally filed an administrative application seeking two non-standard 160-acre gas units.

(23) Nearburg never attempted to dedicate its well to the existing 320-acre spacing unit consisting of the E/2 of Section 34, nor did Nearburg explore any other solutions or options.

(24) On January 29, 2001, Nearburg sent notice to Redrock of Nearburg's administrative application. On February 12, 2001, Redrock filed an objection and this matter was set for hearing on March 22, 2001 and then continued repeatedly until June 28, 2001.

(25) By the time of the hearing, the Nearburg well had produced in excess of 900 MMCF of gas.

THE DIVISION'S DECISION

(26) The Division finds that:

(a) the definition of "correlative rights" requires the Division to allocate reserves **only "so far as it is practicable to do so..." (emphasis added);**

(b) in accordance with the Division's definition of "correlative rights", it is not practicable to conclude that the SE/4 makes no contribution of reserves to the Nearburg well nor determine the allocation of those reserves between the NE/4 and SE/4 of Section 34; **See Grace v. Oil Conservation Commission, 87 NM 205 (1975) at pages 210-211**

(c) Nearburg's geologist's contention that the SE/4 of Section 34 should be excluded is based upon speculation because the radius of investigation of the log utilized is less than 2 feet from the wellbore and does not provide substantial evidence concerning the reserves for all of the SE/4 of this section;

(d) Nearburg's geologist could not testify as to the exact shape, size or orientation of either Morrow sand stringer in the Nearburg well;

(e) Nearburg's petroleum engineer could not confirm the size, shape or orientation of the GRE sand as interpreted by Nearburg's geologist;

(f) Nearburg failed to provide substantial evidence as to the amount of original gas in place within the E/2 of Section 34 in the GRE sand and its two experts could not agree on the total volume of gas in place;

(g) the inconclusive and at times conflicting testimony of both Nearburg experts as to the productive limits, sand orientation and the amount of recoverable reserves in the E/2 of this section are insufficient basis to approve the two non-standard units as Nearburg as requested;

(h) it is not practicable to vertically and horizontally subdivide the Morrow formation in the E/2 of Section 34 as Nearburg requests;

(i) historically, due to the vary nature of the Morrow reservoir, the amount of recoverable gas under each tract cannot be practicably determined in Morrow gas pools, including the Grama Ridge Morrow Gas Pool; **For examples, see Order R-4704 and R-4706**

(j) although Nearburg contends that the Morrow sand stringers produced in the EOG well are not productive in the Nearburg well, more than 4.1 BCF of gas production from the EOG well in the SE/4 was shared with the owners in the NE/4 of this section;

(k) it violates the correlative rights of the owners in the SE/4 to now exclude them from participation in production from the Nearburg well;

(l) Nearburg's application amounts to nothing more than down spacing the pool after the fact--the only purpose for which is the allow Nearburg to avoid responsibility for their negligence at the expense of the owners in the SE/4 of this section;

(m) by granting Nearburg's application, the Division would establish the precedent whereby the operator of any such Morrow "infill" well can be granted an exception from Rule 104 based upon the subjective interpretation of the limited horizontal extent of certain individual Morrow sand stringers;

(n) the approval of Nearburg's application will circumvent Division Rule 104 by effectively "downspacing" a spacing unit "after" the fact;

(o) Nearburg's geologic presentation simply validates the recent modifications of Rule 104 which now allows for an infill well on a 320-acre GPU;

(p) by granting Nearburg's application, the Division will be a party to a total disregard for interest owners' correlative rights by allowing an operator, for its own selfish interests, to reconfigure spacing unit size and/or orientation after the original (EOG well) and infill well (Nearburg well) have been drilled and produced;

(q) by granting Nearburg's application, the Division will establish a precedent which will allow any operator choosing to drill an infill well on an existing 320-acre unit to simply carve out half the unit by asking for a 160-acre non-standard unit based upon the vertical and horizontal discontinuous nature of the Morrow sand stringers;

(r) granting Nearburg's application will substantially alter and disrupt the regulatory system of the New Mexico Oil Conservation Division:

(i) by requiring the reallocation of past and future production based upon geologically constructed spacing units created after the wells are drilled and produced; and

(ii) creating the opportunity to alter existing spacing units every time there is a change in ownership between portions of those units.

IT IS THEREFORE ORDERED THAT:

- (1) Nearburg application is hereby **denied**.
- (2) Nearburg's well shall be immediately shut-in pending the following:
 - (a) dedication of a 320-acre spacing unit consisting of the E/2 of Section 34;
 - (b) declaration of a single Division approved operator for the E/2 of Section 34;
 - (c) voluntary consolidation of E/2 of Section 34 to well, or in the absence of such agreement, a Division compulsory pooling order;
 - (d) reallocation and payment of proceeds from date of first production to all interest owners based upon a 320-acre dedication.
- (3) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY
Director