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

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 12816

THE APPLICATION OF TMBR/SHARP DRILLING, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

CASE NO. 12841

APPLICATION OF OCEAN ENERGY, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

CASE NO. 12859

APPLICATION OF DAVID H. ARRINGTON OIL & GAS, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

CASE NO. 12860

APPLICATION OF OCEAN ENERGY, INC. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

ORDER NO. R-11700-D

ORDER OF THE OIL CONSERVATION COMMISSION

BY THE COMMISSION:

THIS MATTER came before the Oil Conservation Commission (hereinafter referred to as "the Commission") for evidentiary hearing on March 20, 2003 at Santa Fe, New Mexico on application of TMBR/Sharp Drilling Inc. (hereinafter referred to as "TMBR/Sharp"), David H. Arrington Oil and Gas Inc. (hereinafter referred to as "Arrington") and Ocean Energy Inc. (hereinafter referred to as "Ocean"), *de novo*, and the Commission, having carefully considered the evidence, the pleadings and other materials submitted by the parties hereto, now, on this 12th day of June, 2003,

FINDS,

1. Notice has been given of the application and the hearing on this matter, and the Commission has jurisdiction of the parties and the subject matter herein.

2. This matter is before the Commission on applications of Arrington and Ocean Energy for review *de novo*.

3. The four cases comprising this matter were consolidated for hearing before the Division because the applications implicated the same property and any decision in one of the cases would necessarily affect the remaining applications. The cases remain consolidated for purposes of the hearing before the Commission.

4. In Case No. 12816, TMBR/Sharp seeks an order pursuant to NMSA 1978, § 70-2-17 pooling uncommitted mineral interests from the surface to the base of the Mississippian formation underlying the N/2 of Section 25, Township 16 South, Range 35 East, NMPM, Lea County, New Mexico. TMBR/Sharp proposes to form a standard 320-acre lay-down gas spacing unit for any and all formations and/or pools developed on 320-acre spacing within that vertical extent, including the Undesignated Shoe Bar-Atoka Gas Pool, Undesignated Townsend-Morrow Gas Pool, Undesignated Shoe Bar-Mississippian Gas Pool, and Undesignated North Townsend-Mississippian Gas Pool. The proposed spacing unit is to be dedicated to TMBR/Sharp's Blue Fin "25" Well No. 1 (API No. 30-025-35865) (hereinafter referred to as "the 25-1"), at a standard gas well location 1913 feet from the North line and 924 feet from the West line (Unit E) of Section 25. Division records indicate that a total depth of 13,200 feet in this well was reached on June 26, 2002.

5. In Case No. 12841, Ocean seeks an order pooling all mineral interests from the surface to the base of the Mississippian formation underlying the W/2 of Section 25. Ocean Energy proposes to form a standard 320-acre stand-up gas spacing unit for any and all formations and/or pools developed on 320-acre spacing within that vertical extent. The proposed spacing unit is to be dedicated to Ocean Energy's proposed Triple Hackle Dragon "25" Well No. 1 to be drilled at a standard gas well location in the SW/4 NW/4 (Unit E) of Section 25.

6. In Case No. 12859, David H. Arrington Oil & Gas, Inc. (hereinafter referred to as "Arrington") seeks an order pooling all mineral interests underlying the E/2 of Section 25. Arrington proposes to form a standard 320-acre stand-up gas spacing unit for any and all formations and/or pools developed on 320-acre spacing. Arrington also seeks an order pooling all mineral interests in the NE/4 of Section 25. Arrington proposes to form a standard 160-acre spacing and proration unit for any and all formations and/or pools developed on 160-acre spacing, including the Undesignated North Shoe Bar-Strawn Pool and Undesignated North Shoe Bar-Wolfcamp Pool. Arrington also seeks an order pooling all mineral interests in the E/2 NE/4 of Section 25 to form a standard 80-acre stand-up oil spacing and proration unit for any pool developed on 80-acre spacing, including the Undesignated Shoe Bar-Devonian Pool. Arrington proposes to dedicate the foregoing to its proposed Glass-Eyed Midge "25" Well No. 1 (API No. 30-025-35787) to be drilled 803 feet from the North line and 962 feet from the East line (Unit A) of Section 25.

7. In Case No. 12860, Ocean seeks an order pooling all mineral interests from the surface to the base of the Mississippian formation underlying the W/2 of Section 25. Ocean proposes to form a standard 320-acre stand-up gas spacing unit for any and all formations and/or pools developed on 320-acre spacing within that vertical extent. Ocean proposes to dedicate the foregoing to its proposed Triple Hackle Dragon "25" Well No. 2 to be drilled a standard gas well location in the NE/4 SW/4 (Unit K) of Section 25.

8. Prior to the hearing in this matter, TMBR/Sharp and Arrington notified the Commission of their voluntary agreement with respect to Arrington's participation in the 25-1 well. During the hearing, the Commission was advised that Arrington had conveyed its interests in the north half of Section 25 to TMBR/Sharp and Arrington accordingly withdrew its application in Case Nos. 12859, and withdrew its application for hearing *de novo* in Cases No. 12816, 12841, 12859 and 12860.

9. The parties having reached agreement with respect to Case No. 12859 and having stipulated to dismissal of the matter, Case No. 12859 should be dismissed.

10. The applications in Cases No. 12816, 12841 and 12860 remain before the Commission pursuant to Ocean's applications for review *de novo*.

11. The applications in Cases Nos. 12816, 12841 and 12860 each propose compulsory pooling within Section 25. What differs about the applications is the proposed orientation of the spacing units and the location of the wells. TMBR/Sharp's application in Case No. 12816 proposes a north-half spacing unit and proposes to dedicate its pre-existing well in the northwest quarter of the section to that spacing unit. Ocean's application in Case No. 12841 proposes to locate a well in the northwest quarter, but proposes a west-half unit. Its application in Case No. 12860 proposes to locate a well in the southwest quarter of the section, and also proposes a west-half spacing unit. Thus, TMBR/Sharp prefers a north-half ("lay down") unit and Ocean prefers a west-half ("stand-up") unit.

12. A controversy between these parties concerning permits to drill in Section 25 was before us once previously. *See* Order No. R-11700-B.

13. It is proper to order compulsory pooling under NMSA 1978, § 70-2-17(C) so long as the evidence presented to the Commission justifies it, and so long as waste is prevented and correlative rights are protected.

14. TMBR/Sharp supported its application for a north-half unit with evidence that the reservoir from which the 25-1 well is currently producing is confined to the northwest quarter of Section 25, and that the reservoir does not exist in the southwest quarter. Ocean supported its application for hearing *de novo* by presenting evidence that the 25-1 is producing from a reservoir that extends over several sections and ultimately extends into the southwest quarter of Section 25 where Ocean controls working interests.

15. The parties therefore focused their presentations on the size of the reservoir from which the 25-1 well produces. Ocean argued that since the reservoir extends into property which it controls in the southwest quarter of Section 25, the Commission has a duty to protect Ocean's correlative rights and assign a west half spacing unit to the well. TMBR/Sharp argued that the reservoir is limited in size and Ocean has no right to share in the production from its 25-1 well.

16. It seems that the critical question is whether the reservoir extends into the southwest quarter of Section 25. If the reservoir extends into the southwest quarter as alleged by Ocean and does not exist in the northeast quarter and this body were to approve of a north-half unit, Ocean's correlative rights would be violated and the application of TMBR/Sharp may not be approved. However, if the reservoir only exists in the northwest quarter of Section 25 and does not extend into the southwest quarter, TMBR/Sharp's application should be approved, because no basis exists to permit Ocean to share in production to which it is not entitled. Resolution of these questions requires us to examine difficult questions of petroleum engineering and geology.

17. TMBR/Sharp's geological witness testified during the hearing that the northwest quarter of Section 25 contains a "Chester Bowl," or closed low, that contains hydrocarbons (principally natural gas). TMBR/Sharp theorized that Chester Bowls in the vicinity of Section 25 consist of detrital aprons that closely align with the major faults; the faults controlled deposition. The bowls or closed lows formed when a deep synclinal structure was created between the major faults, and a major structural event at the end of the Mississippian Age permitted erosion from fault scarps into the closed lows. TMBR/Sharp's witnesses testified that the Chester detrital material was preferentially deposited into the low areas, where it is found today.

18. TMBR/Sharp argued that the closed low in Section 25 into which the 25-1 well is perforated is of very limited areal extent. TMBR/Sharp argued that the two separate depressions on the Chester surface that exist in Section 25 are structurally controlled by a fault-induced high area. Similarly, a nearby closed low in Section 24 is also structurally controlled (and depositionally separated). As such, TMBR/Sharp argued that the reservoirs in Sections 24 and 25 are separate and distinct sources of supply. Because the areal extent of the pod in the northwest quarter is estimated to be 54.6 acres based on seismic interpretation, the pod is completely enclosed within the northwest quarter and the source of supply does not extend into the southwest quarter.

19. TMBR/Sharp claimed that principles of petroleum engineering supported its view of the reservoir. TMBR/Sharp presented pressure data from the 25-1 and 24-1 wells and argued that the data demonstrate the two wells are not in pressure communication, and therefore not producing from a common reservoir. TMBR/Sharp argued that the 24-1 well had an initial bottomhole pressure of 6,326 psi and the 25-1 had an initial bottomhole pressure of 6,059 psi. In late October of 2002, production had reduced the pressure in the wells to 2,529 psi and 3,723 psi, respectively. TMBR/Sharp also pointed

out that the initial pressure in the 25-1 was far less than the pressure seen at the same time in the 24-1 (approximately 4,500 psi). TMBR/Sharp argued that the pressure differences observed shows that the wells do not communicate, and this conclusion is difficult to argue with, although the low permeability in the 25-1 well may well mask any communication. From this evidence, TMBR/Sharp estimates that the reserves in the 24-1 well are less than 2 bcf, probably about 1.759 bcf, and in the 25-1 well are much less.

20. Ocean presented evidence during the hearing of this matter to the contrary. Ocean's geological witness argued that TMBR/Sharp had misinterpreted the seismic data that suggested the Chester bowls had formed when material eroded from the fault scarps into the closed lows described by TMBR/Sharp. Ocean's witnesses testified that the rolling "hummocky" character seen in the seismic lines actually reflects geologic events that occurred after deposition, and at the time of deposition the material was not confined but was a blanket deposition. Thus, Ocean argued that the hydrocarbons are not confined to the bowls as suggested by TMBR/Sharp, but are instead confined to a low-lying depression that runs parallel to the north-south trending fault in Section 26. Thus, under Ocean's interpretation, the reservoir continues into the southwest quarter of Section 25 (and even into the eastern half of the Section).

21. Ocean also claimed that principles of petroleum engineering supported its geological presentation, but approached the petroleum engineering problem in a somewhat unorthodox manner. Ocean disagreed with the pressure evidence presented by TMBR/Sharp, and claimed that the 24-1 and the 25-1 contain two separate zones, the upper Chester and the lower Chester, and that the 25-1 was tested in a zone that is not being produced in the 24-1. That zone has higher pressure which skewed the pressure testing in the 25-1. According to Ocean, when adjusted accordingly, the correct initial pressure in the 25-1 is 5425.33 psi, significantly below the original reservoir pressure of 6,100 psi claimed by TMBR/Sharp. Ocean argues that if a lower initial bottomhole pressure is used to account for this phenomenon, a material balance calculation has a more realistic result.

22. TMBR/Sharp's position on both the geological and engineering evidence is persuasive. While this body does not necessarily accept the Chester bowl depositional theory of TMBR/Sharp, it is apparent from the petroleum engineering evidence that whatever depositional model is favored, the reservoir from which the 25-1 well is producing is quite limited in areal extent. All the evidence, taken together, fails to establish that any material part of the reservoir extends into the southwest quarter of Section 25. Ocean's application should therefore be denied.

23. As noted, the initial pressure reported in the 25-1 by TMBR/Sharp was 6,059 psi and the pressure in the well in October 2002 had declined to 3,723 psi. At that time (October, 2002), the well had produced only 5,343 mcf (although the well has now produced over .1 bcf, no pressure data is available after October 2002). This data doesn't provide a very complete picture from which to analyze the possible performance of the 25-1. However, the data that does exist indicates that the 25-1 may produce at most 1.8

to 2 bcf before reaching its economic life. It is obviously not the well that TMBR/Sharp hoped it would be. The small size of the reservoir described by the pressure data is more consistent with that portrayed by TMBR/Sharp than that portrayed by Ocean.

24. This conclusion is also supported by studying the available pressure data and by studying the pressure decline characteristics of the well.

25. Neither TMBR/Sharp nor Ocean presented a decline curve analysis. TMBR/Sharp did not present a decline curve analysis because it claimed that pressure evidence developed in connection with the 24-1 were not predictive of the 25-1's performance. Ocean presented a decline curve analysis but did not honor the data because it claimed the data was not accurate. Nevertheless, the pressure data presented in exhibits (such as TMBR/Sharp's Exhibit 38) show that the 25-1 is exhibiting a steep pressure decline suggestive of only modest ultimate recovery. Exhibits such as TMBR/Sharp's Exhibit 35 also illustrate that the pressure seen in the 25-1 is declining at a comparatively more rapid rate that the 24-1, consistent with TMBR/Sharp's argument that the reservoir in Section 24 is larger than the reservoir in Section 25.

26. Studying the data utilizing the material balance approach yields a similar conclusion. Two data points are available for the 25-1 (the initial pressure and a build-up test conducted by TMBR/Sharp in October 2002) and point to an estimated ultimate recovery of at most 1.8 to 2 bcf.

27. As noted earlier, Ocean's estimates of the gas in place are based on a volumetric analysis (Ocean's Exhibit 15). Unfortunately, that analysis is based on numerous assumptions, including that the reservoir is unstable and of low porosity and that the pressure testing of TMBR/Sharp was faulty. However, it is not appropriate to disregard the only physical evidence that exists unless it is obviously defective, which it does not appear to be in this case.

28. It appears that evidence favors a finding that the reservoir is limited and probably will produce over its economic life at most 1.8 to 2 bcf. It appears very unlikely that the 25-1 will produce 5 or 6 bcf over its economic life, as suggested by Ocean using volumetric calculations, or 3.5 as suggested in the initial volumetric analyses of TMBR/Sharp. The producing characteristics demonstrate that the reservoir is extremely limited and it seems probable that it is limited to the northwest quarter as suggested by TMBR/Sharp's geologic evidence.

29. Since the reservoir is limited as described in previous paragraph, no basis exists to permit Ocean to share in production from the well; it seems to be undisputed that Ocean lacks the right to drill or produce natural gas anywhere in the north half of Section 25. TMBR/Sharp's argument is thus well taken that its correlative rights and those of other interest owners in the north half of Section 25 would be impaired if this body were to require TMBR/Sharp to share profits from the 25-1 with persons holding an interest in the southwest quarter of the section. TMBR/Sharp's argument that waste would be

prevented if a north half unit were created is also well-taken: only two wells would be drilled instead of three and the wells would be drilled on the actual structures rather than according to property ownership.

30. It appears to be undisputed that a single owner of an interest in the north half of Section 25 has not voluntarily agreed to participate in the drilling and production from the 25-1 well. Indeed, the testimony during the hearing was that the single owner could not be located, and TMBR/Sharp was unable to consolidate the interests of all of the non-participating owners in the proposed north half unit by way of voluntary agreement. Thus, at time of the hearing of this matter, TMBR/Sharp controlled 99.765625 % of the working interest ownership, and one party who could not be located controlled .15625 % of the north half of Section 25.

31. To avoid the drilling of unnecessary wells, to protect correlative rights, to prevent waste and to afford to the owner of each interest in the north half of Section 25 the opportunity to recover or receive without unnecessary expense its just and fair share of hydrocarbon production in any pool resulting from this order, TMBR/Sharp's proposal set forth in Case No. 12816 should be approved, and the applications of Ocean in Cases No. 12841 and 12860 should be denied.

32. TMBR/Sharp should be designated the operator of the Blue Fin "25" Well No. 1 and the north half of Section 25 should be designated as a standard 320-acre lay-down gas spacing unit from the surface to the base of the Mississippian formation for any and all formations and/or pools developed on 320-acre spacing within that vertical extent.

33. After pooling, uncommitted working interest owners should be referred to as "non-consenting working interest owners." Any non-consenting working interest owner should be afforded the opportunity to pay its share of actual well costs to the operator in lieu of paying its share of reasonable well costs out of production.

34. Since the 25-1 well has already been drilled and completed, the risk penalty should be assessed at 100 percent as set forth in numerous orders of the Division.

35. Reasonable charges for supervision (combined fixed rates) should be fixed at $6,000.00 per month while drilling and $ 600.00 per month while producing, provided that these rates should be adjusted annually pursuant to Section III.1.A.3. of the COPAS form titled "*Accounting Procedure-Joint Operations.*"

IT IS THEREFORE ORDERED, AS FOLLOWS:

1. Pursuant to the application of TMBR/Sharp in Case No. 12816, all uncommitted mineral interests, whatever they may be, from the surface to the base of the Mississippian formation underlying the north half of Section 25, Township 16 South, Range 35 East, NMPM, Lea County, New Mexico, are hereby pooled to form a standard 320-acre lay-down gas spacing unit for any and all formations and/or pools developed on 320-acre spacing within that vertical extent, which presently include but are not

necessarily limited to the Undesignated Shoe Bar-Atoka Gas Pool, Undesignated Townsend-Morrow Gas Pool, Undesignated Shoe Bar-Mississippian Gas Pool, and Undesignated North Townsend-Mississippian Gas Pool.

2. This unit shall be dedicated to the recently drilled Blue Fin "25" Well No. 1 (API No. 30-025-35865) located at a standard gas well location 1913 feet from the North line and 924 feet from the West line (Unit E) of Section 25.

3. The applications of Ocean Energy in Cases No. 12841 and 12860 shall be and hereby are denied.

4. The applications of Arrington and its application for hearing *de novo* in these cases is dismissed.

5. TMBR/Sharp is designated the operator of the above-described Blue Fin "25" Well No. 1 and of the standard 320-acre lay-down gas spacing unit comprising the north half of Section 25.

6. After pooling, uncommitted working interest owners shall be referred to as "non-consenting working interest owners." Within thirty (30) days after the effective date of this order, the operator shall furnish the Oil Conservation Division and each known non-consenting working interest owner in the unit an itemized schedule of actual well costs.

7. Within thirty (30) days from the date the schedule of actual well costs is furnished, any non-consenting working interest owner shall have the right to pay its share of actual well costs to the operator in lieu of paying its share of reasonable well costs out of production, and any such owner who pays its share of actual well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

8. If no objection to the actual well costs is received by the Division and the Division has not objected within forty-five (45) days following receipt of the schedule described in the forgoing paragraph, the actual well costs shall be the reasonable well costs; provided, however, that if there is an objection to actual well costs within the forty five day period, the Division shall determine reasonable well costs after public notice and hearing.

9. Within sixty (60) days following determination of reasonable well costs, any non-consenting working interest owner who has paid its share of actual costs in advance as provided above shall receive from the operator its share of the amount, if any, that actual well costs exceed reasonable well costs.

10. The operator is hereby authorized to withhold the following costs and charges from production:

(**a**) the proportionate share of reasonable well costs attributable to each non-consenting working interest owner who has not paid its share of actual well costs within 30 days from the date the schedule of actual well costs is furnished; and

(**b**) as a charge for the risk involved in the drilling of the well and the risk involved in obtaining payout, 100 percent of the above costs.

11. The operator shall distribute the costs and charges withheld from production, proportionately, to the parties who advanced the well costs.

12. Reasonable charges for supervision (combined fixed rates) are hereby fixed at $6,000.00 per month while drilling and $600.00 per month while producing, provided that these rates should be adjusted annually pursuant to Section III.1.A.3. of the COPAS form titled "*Accounting Procedure-Joint Operations.*" The operator is hereby authorized to withhold from production the proportionate share of both the supervision charges and the actual expenditures required for operating the well, not in excess of what are reasonable, attributable to each non-consenting working interest.

13. Any unleased mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under this order.

14. Any well costs or charges that are to be paid out of production shall be withheld only from the working interests' share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

15. All proceeds from production from the well that are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership. The operator shall notify the Division of the name and address of the escrow agent within thirty (30) days from the date of first deposit with the escrow agent.

16. Should all the parties to this compulsory pooling order reach voluntary agreement subsequent to entry of this order, this order shall thereafter be of no further effect.

17. The operator of the well and unit shall notify the Division in writing of the subsequent voluntary agreement of all parties subject to the forced pooling provisions of this order.

18. Jurisdiction of this case is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, MEMBER

ROBERT LEE, MEMBER

LORI WROTENBERY, CHAIR

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