



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

January 15, 1999

OIL AND GAS DOCKET NO. 7B-0220779

THE APPLICATION OF TANDEM ENERGY CORPORATION TO AMEND FIELD RULES IN THE X-RAY (MARBLE FALLS) FIELD, ERATH COUNTY, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: December 3, 1998

Hearing held: January 15, 1999

Appearances

Dale Miller
Jeffrey Doman

Representing
Tandem Energy Corporation

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

The current field rules for the X-Ray (Marble Falls) Field were adopted June 10, 1963, under Oil & Gas Docket No. 7-52,001, as amended, and provide for

1. 467-933' well spacing
2. 320 acre gas proration units with 160-acre optional units; and
3. Allocation based on the product of surface pressure and assigned acreage.

The allocation formula is no longer in effect as the field has been classified as salvage and wells have capacity allowables. Tandem Energy is proposing to add 40-acre optional units and the following designated interval rule:

1. Designated interval from 3190 to 3258 feet as shown on the log of the Tandem Energy H.T. Wylie Lease Well No. 2.

DISCUSSION OF THE EVIDENCE

The X-Ray (Marble Falls) Field was discovered in 1920, but there was not significant development of the field until the 1960's. In 1980, optional units of 160-acres were adopted and a number of infill wells were drilled during the 1980's. At present there are 78 active wells, 55 of which are operated by Tandem. Cumulative production is 136 BCF of gas, and the field is classified by the Commission as salvage.

The interval between 3190 and 3258 feet on the log of the Tandem Wylie Well No. 2 shows the productive Marble Falls interval. This well, drilled in October of 1988, is now completed in a lower interval but will eventually be recompleted to the Marble Falls. The pay section consists of coarse-grained sandstone cemented by calcite. The sands are lenticular, with numerous permeability barriers, as they were deposited in a braided-stream environment. The applicant believes that there are numerous reservoir compartments that have not been drained by the existing wells.

Some of the infill wells drilled in the 1980's encountered bottom-hole pressure of 1200 psi and some of these wells are still producing after a BCF of gas has been withdrawn from them. The initial producing rates and ultimate recoveries of both early and infill wells are highly variable. All together, Tandem's wells have produced 67 BCF since 1937.

A representative core report indicates low permeability, in the range of 0.1 to 0.2 md. The porosity is assumed to average 10%, the water saturation equals 39% and the recovery factor is assumed to be 80%. Assuming the reservoir averages 40 feet in thickness, volumetric calculations indicate 2.66 BCF of recoverable gas underneath 320 acres. Based on the cumulative recoveries to date, the various Tandem wells have drained from 4 to 660 acres. Many of Tandem's wells have drained less than 40 acres while six have drainage areas over 320 acres. Adopting rules of 320 acres with 10% tolerance and 40-acre optional units will allow the operators to assign from 40 to 352 acres. The current spacing of 467 feet from lease lines and 933 feet between wells will allow enough flexibility to drill infill wells.

FINDINGS OF FACT

1. Notice of this hearing was given to all operators in the X-Ray (Marble Falls) Field on December 31, 1998.
2. Tandem operates 55 of the 78 active wells in the field.
3. The subject field was discovered in 1920 and has produced 136 BCF since then.
4. The producing interval, shown between 3190 and 3258 feet in the log of the Wylie No. 2, is lenticular with numerous permeability barriers.
5. When 160-acre option units were adopted in 1980, there were numerous infill wells drilled that encountered undrained portions of the reservoir.

- a. Infill wells drilled during the 1980's encountered initial pressures as high as 1200 psi.
- b. Some of the 1980's infill wells produced as much as 1 BCF and are still producing.
- 6. Assuming a uniform net pay of 40 feet, volumetric calculations indicate 2.66 BCF recoverable from underneath 320 acres.
- 7. The cumulative recoveries of Tandem's wells indicate drainage areas from 4 to 660 acres with many wells draining less than 40 acres and six with calculated drainage areas over 320 acres.
- 8. The current well spacing of 467-933 feet will provide enough flexibility for infill drilling down to 40 acres.
- 9. The existing allocation formula is based on the product of surface pressure and acreage but the field is classified as a salvage reservoir.

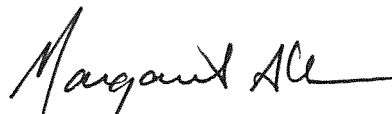
CONCLUSIONS OF LAW

- 1. Proper notice as required by statute was given to all operators in the field.
- 2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
- 3. The requested amendments to the field rules will protect correlative rights, prevent waste and promote orderly development of the reservoir.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the requested amendments to the field rules be adopted.

Respectfully submitted,



Margaret Allen
Technical Hearings Examiner

Date of Commission Action _____

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